

## SUPPLEMENT.

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2407.—Vol. LI.

LONDON, SATURDAY, OCTOBER 8, 1881.

PRICE (WITH THE JOURNAL) SIXPENCE  
PER ANNUM, BY POST, £1 4s.

JORDAN'S PATENT  
**PULVERISING MACHINE,**  
FOR REDUCING  
MINERALS, CHEMICALS, CEMENTS, CEREALS, &c.  
**T. B. JORDAN AND SON,**  
52, GRACECHURCH STREET, LONDON.



SIMPLE.  
DURABLE.  
EFFECTIVE  
—  
OTHER  
SPECIALITIES.  
GOLD  
REDUCING PLANT.  
HAND-POWER  
ROCK DRILLS  
GENERAL  
MINING PLANT.  
Illustrated Catalogues on application.

### PHOSPHOR BRONZE.

REGISTERED TRADE MARK.

THE BEST METAL FOR  
**BEARINGS, SLIDE VALVES,  
PUMPS,  
STEAM FITTINGS, &c.,**  
Supplied in Ingots or Castings.

WIRE, SHEETS, TUBES, &amp;c.

For Ingot Quotations, see Prices Current, page 6.

Sole Manufacturers:

**THE PHOSPHOR BRONZE COMPANY**  
LIMITED:

SUMNER and EMERSON STREETS, SOUTHWARK, LONDON, S.E.

ALEX. CHAPLIN AND CO.,

CRANSTONHILL ENGINE WORKS, GLASGOW.

PATENTEES AND SOLE MANUFACTURERS OF

CHAPLINS' PATENT STEAM CRANES, HOISTS,

LOCOMOTIVES, AND OTHER ENGINES AND BOILERS

LONDON HOUSE:—

No 63 QUEEN VICTORIA STREET, LONDON.

### PATENT "INGERSOLL ROCK DRILL."

MEDAL  
AND  
HIGHEST  
AWARDS.

1872—American Institute.  
1873—Ditto.  
1874—London International.  
1875—Manchester.  
1875—Leeds.  
1875—Cornwall.  
1875—Rio de Janeiro.  
1876—Australia.  
1876—Philadelphia.  
1877—Cornwall.  
1877—Mining Institute.  
1878—Paris.



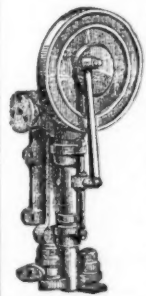
LE GROS, MAYNE, LEAVER, & CO.,  
60, Queen Victoria Street, London, E.C.,  
SOLE AGENTS FOR THE

### DUSSELDORF

WROUGHT IRON STEAM TUBE WORKS.  
TUBES FOR BOILERS, PERKINS'S, and other HOT-WATER SYSTEM

For Catalogues of Rock Drills, Air Compressors, Steel or Iron Steam Tubing, Boiler Tubes, Perkins's Tubes, Pneumatic Tubes, and all kinds of Machinery and MINING PLANT, apply to—  
60, QUEEN VICTORIA STREET, E.C.

**ALEX. WILSON & CO.,**  
VAUXHALL IRONWORKS,  
LONDON, S.W.,  
MANUFACTURERS OF



THE VAUXHALL DONKEY PUMPS.  
THE EXCELSIOR DIRECT-ACTING PUMPS.

**Air Compressors.  
Winding Engines.  
HOISTING MACHINERY.**

ILLUSTRATED AND PRICED CATALOGUES ON APPLICATION.

### ASBESTOS.

ASBESTOS ENGIN PACKING,  
ASBESTOS MILLBOARD JOINTING,  
ASBESTOS BOILER COVERING,  
ASBESTOS CEMENT,

ARE UNRIVALLED.

Price Lists and all information from the UNITED ASBESTOS COMPANY (LIMITED):—

HEAD OFFICES: 161, QUEEN VICTORIA STREET, LONDON, E.C.

WORKS:—ROME, TURIN, AND GLASGOW.

**ELLIS LEVER AND CO.,**  
BRATTICE CLOTH MANUFACTURERS,  
WEST GORTON WORKS,  
MANCHESTER.

ESTABLISHED A QUARTER OF A CENTURY.

### "Kainotomon" Rock Drill

SELECTED BY THE

BRITISH, PERUVIAN, &amp; SAXON GOVERNMENTS.



### SUPERIOR AIR COMPRESSORS.

**T. A. WARRINGTON,**  
30, King-street, Cheapside, London.

### The Barrow Rock Drill

COMPANY

SUPPLY their CELEBRATED ROCK DRILLS, AIR COMPRESSORS, &amp;c., and all NECESSARY APPLIANCES for working the said Drills.

Their DRILLS have most satisfactorily stood the TEST of LONG and CONTINUOUS WORK in the HARDEST KNOWN ROCK in numerous mines in Great Britain and other countries, clearly proving their DURABILITY and POWER.

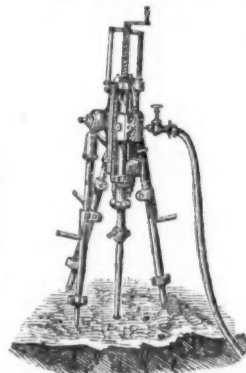
The DRILLS are exceedingly STRONG, LIGHT, SIMPLE, and adapted for ends, stopes, quarries, and the sinking of shafts. They can be worked by any miner.

For PRICES, Particulars and Reports of Successful and Economical Working, apply to—

**LOAM AND SON,**  
LISKEARD, CORNWALL.

THE PATENT

### "ECLIPSE" ROCK-DRILL AND "RELIANCE" AIR-COMPRESSOR

SILVER MEDAL—PARIS, 1878—  
HIGHEST AWARD.

Are NOW SUPPLIED to the  
ENGLISH, FOREIGN, and  
COLONIAL GOVERN-  
MENTS, and are also IN USE  
in a number of the largest  
MINES, RAILWAYS, QUAR-  
RIES, and HARBOUR  
WORKS in GREAT BRITAIN  
and ABROAD.

FOR ILLUSTRATED CATALOGUE AND PRICES, apply to—  
**HATHORN & CO., 22, Charing Cross, London, S.W.**

### JOSEPH FIRTH AND SONS' New Patent Brick-making Machine,

Embraces the following advantages—viz.:

Implicitly, strength, and durability. Compactness and excellence of mechanical arrangements, large producing capabilities, moderate cost.

It makes two bricks at once, and will make 2,000 to 14,000 plastic pressed bricks per day, hard enough to go direct to the kiln without drying; or it will make the bricks thoroughly plastic if required. For works requiring a machine at less cost the machine is made to turn out one brick at once, and is capable of producing 8000 bricks per day.

The Machine can be seen at work daily at the Brickworks of the Patentees, JOSEPH FIRTH AND SONS, WEBSTER HILL, DEWSBURY, and CROW-BURY BRICK WORKS, SUSSEX; as also their Patent Gas Kiln for Burning Bricks, which possesses the following amongst other advantages, viz.:—Economy in Fuel, Rapidity and Quality of Work, even Distribution of Heat, and Total Consumption of Smoke.



FIRST AWARD  
SYDNEY, 1879.

BICKFORD'S PATENT FUSES

FIRST AWARD  
MELBOURNE, 1881.



SILVER MEDAL OF THE MINING INSTITUTE OF CORNWALL, TRURO, 1880,  
for an Improved Method of Simultaneous Blasting.

FOR SIMULTANEOUS BLASTING.

**BICKFORD, SMITH AND CO,**

THE INVENTORS, AND ORIGINAL PATENTEES AND MANUFACTURERS OF

**SAFETY AND INSTANTANEOUS FUSES AND IGNITERS**

FOR USE IN ALL BLASTING OPERATIONS AND SPECIALLY PREPARED FOR ANY CLIMATE

Note the **TRADE MARK**: Two Separate threads through centre of Fuse.

BICKFORD, SMITH AND CO.'S Patent Igniters and Instantaneous Fuses for simultaneous blasting are being extensively used at home and abroad. This improved method is the cheapest, simplest, and most dependable ever introduced for simultaneously firing any number of charges. For full particulars, see Descriptive Catalogue.

PRICE LISTS, DESCRIPTIVE CATALOGUES, AND SAMPLES TO BE HAD ON APPLICATION.

FACTORIES—TUCKINGMILL CORNWALL; AND ST. HELENS JUNCTION, LANCASHIRE.

HEAD OFFICE—TUCKINGMILL, CORNWALL.

LANCASHIRE OFFICE—ADELPHI BANK CHAMBERS, SOUTH JOHN STREET, LIVERPOOL

LONDON OFFICE—85, GRACECHURCH STREET, E.C.

Every package bears Bickford, Smith, and Co.'s copyright label.

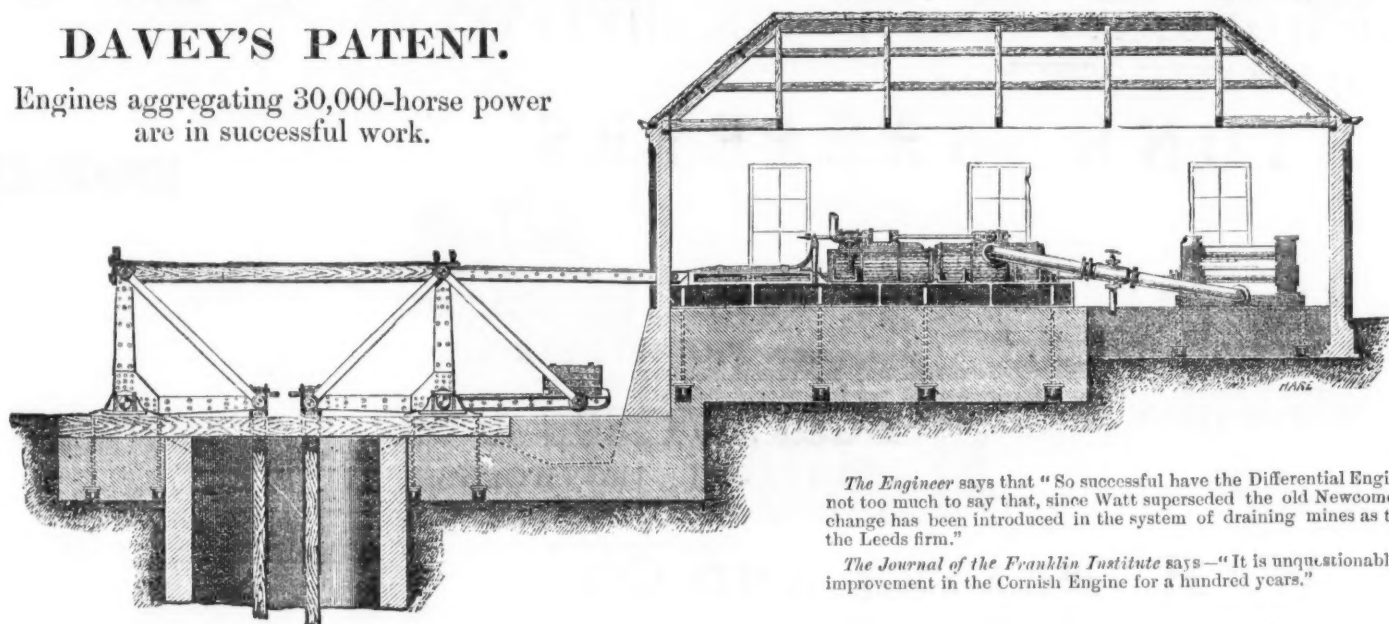
## The Compound Differential PUMPING ENGINE

DAVEY'S PATENT.

Engines aggregating 30,000-horse power  
are in successful work.

Mining Machinery.

WINDING ENGINES, AIR COMPRESSORS, MAN ENGINES,  
CAPSTANS, STAMPS, CRUSHERS, &c., &c.



Winding Engines, &c.

The Engineer says that "So successful have the Differential Engines been, that it is not too much to say that, since Watt superseded the old Newcomen engine, no such change has been introduced in the system of draining mines as that introduced by the Leeds firm."

The Journal of the Franklin Institute says—"It is unquestionably the most marked improvement in the Cornish Engine for a hundred years."

CATALOGUES ON APPLICATION.

**HATHORN, DAVEY, AND CO., LEEDS.**



**SAMUEL OSBORNE AND CO.,**

MANUFACTURERS OF TOUGHENED

**CRUCIBLE STEEL CASTINGS**

Of all descriptions of special strength and solidity.

ALSO, MANUFACTURERS OF

BEST CAST STEEL FOR ENGINEERS' AND MINERS' PURPOSES; FILES; SAWS; HAMMERS; RAILWAY SPRINGS, &c.  
STEEL SHEETS AND FORGINGS.

SOLE MAKERS OF

"R. Mushet's Special Steel," for Lathe and Planing Tools and Drills.  
THE STEEL WHICH REQUIRES NO HARDENING.  
And R. Mushet's Celebrated Extra Best Welding Titanic Cast Steel  
for Borers.

ADDRESS:—

**CLYDE STEEL AND IRON WORKS, SHEFFIELD.**

MONEY LENT, at EIGHT, NINE, and TEN PER CENT., on  
FIRST MORTGAGE of FREEHOLDS for IMPROVEMENTS and  
STOCKING, said freeholds in the Province of MANITOBA.  
Address, HERBERT C. JONES, Solicitor, 20 Masonic Hall, Toronto.



ESTABLISHED 1852.

**SYBRY, SEARLS, AND COMPANY,**

MANUFACTURERS OF THE

**CELEBRATED MINING STEEL,** BRANDED  
**CAST STEEL FOR TOOLS, SHEAR, BLISTER, AND SPRING STEEL**

Cast Steel Drills.  
 Solid Steel Hammers.  
 Steel Picks.  
 Steel Wedges.

Saws.  
 Files.  
 Wagon Springs.  
 Shovels.

Anvils.  
 Vices.  
 Bellows.  
 Engineers' Tools.

**CANNON STEEL WORKS, SHEFFIELD.**

LONDON—1862.



ESTABLISHED 1848.

**W. BRUNTON AND CO.,**  
 Penhellick Safety Fuse Works, Redruth,  
 AND  
 Cambrian Safety Fuse Works, Wrexham,  
 MANUFACTURERS OF

PARIS—1878.

**ALL KINDS OF SAFETY FUSE.**

SILVER MEDAL (HIGHEST AWARD), MELBOURNE  
 EXHIBITION, 1881, for  
 "EXCELLENCE OF MANUFACTURE."



GOLD MEDAL AWARDED, PARIS EXHIBITION 1878.

**THOMAS TURTON AND SONS,**

MANUFACTURERS OF

**MINING STEEL of every description.**

**CAST STEEL FOR TOOLS. CHISEL, SHEAR, BLISTER, & SPRING STEEL**  
**MINING TOOLS & FILES of superior quality.**

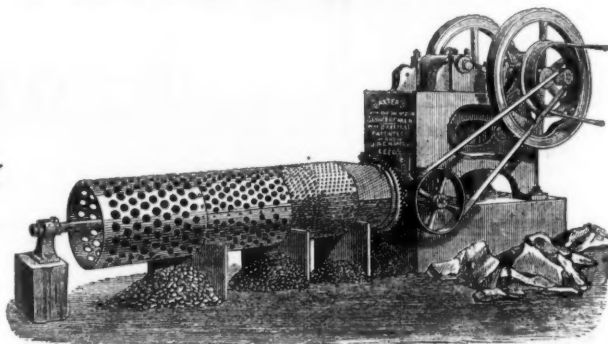
EDGE TOOLS, HAMMERS, PICKS, and all kinds of TOOLS for RAILWAYS, ENGINEERS, CONTRACTORS, and PLATELAYERS.  
 LOCOMOTIVE ENGINE, RAILWAY CARRIAGE and WAGON SPRINGS and BUFFERS.

**SHEAF WORKS & SPRING WORKS, SHEFFIELD.**

LONDON OFFICES—90, CANNON STREET, E.C. PARIS DEPOT—12, RUE DES ARCHIVES. BOSTON MASS., U.S.—40, KILBY STREET.

**STONE BREAKERS.****12 BY 8**

AS SUPPLIED TO THE DERBY  
 CORPORATION.

**W. H. BAXTER AND CO.,**

Patentees and Sole Makers of the

**Only Knapping Motion Stone Breakers and Ore Crushers.**

These Machines turn out the same amount of work with less than half the power of any other, and make a better sample of Road Metal, with less waste. The movement of the Jaw can be altered to suit any kind of material, an advantage possessed by no other machine.

FOR TESTIMONIALS AND FULL PARTICULARS ADDRESS—

**W. H. BAXTER AND CO., 78, ALBION STREET, LEEDS.**

SEVERAL OF THESE MACHINES ARE NOW IN OPERATION.

PROVIDE AGAINST ACCIDENTS!  
 ACCIDENTS WILL HAPPEN!

**A FIXED SUM** in case of death by ACCIDENT, and a WEEKLY ALLOWANCE in the event of INJURY, may be secured by a Policy of the RAILWAY PASSENGERS ASSURANCE COMPANY.

The oldest and largest Company, insuring against Accidents of all kinds.  
 The Right Hon. LORD KINNAIRD, Chairman.

SUBSCRIBED CAPITAL ... .. £1,000,000  
 PAID-UP CAPITAL AND RESERVE ... .. £230,000.  
 MODERATE PREMIUMS.  
 BONUS ALLOWED TO INSURERS AFTER FIVE YEARS.  
 £1,630,000

HAS BEEN PAID AS COMPENSATION.

Apply to the Clerks at the Railway Stations, the Local Agents, and West End Office, 8, Grand Hotel Buildings, Charing Cross, or  
 64, CORNHILL, LONDON.

WILLIAM J. VIAN, Secretary.

**CAPTAIN ABRAHAM FRANCIS, M.E.**  
 GOGINAN, ABERYSTWTH

Now ready.

**FRANCIS'S MAP OF THE LODES AND MINES IN**  
**CARDIGANSHIRE AND MONTGOMERYSHIRE**  
 Shows all the Lodes and Positions of Mines in the two Counties, and no Shareholder should be without it, as it will be found invaluable to Investors.  
 Price, post free, 3s., from Capt. Francis, Goginan, Aberystwith; or from Messrs. FOLTER, GRAY, and Co., 31, Threadneedle-street, London, E.C.

**LEGITIMATE AND ADVANCING MINES.**—  
 A LIST of the MOST SECURE MINES, with their present and future prospects, selected for profitable investment, with remarks on the present mode of forming Mining Companies to the injury of fair mining enterprise, is being published by Messrs. THOMPSON and SON, Plymouth, and will be forwarded post free on application.

**INCREASED VALUE OF WATER-POWER.****MacADAM'S VARIABLE TURBINE.**

This Wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and in this way always assists it by whatever amount of power the water is capable of giving, and therefore saves so much fuel.

This Turbine is applicable to all heights of fall. It works immersed in the fall-water, so that no part of the fall is lost, and the motion of the Wheel is not affected by floods or back-water.

References to places where it is at work will be given on application to—

**MacADAM BROTHERS AND CO.,**  
**BELFAST.**

**SOUTH AUSTRALIAN MINES.**—J. B. AUSTIN, ADELAIDE  
 (Author of "The Mines and Minerals of South Australia.") MINING AND GENERAL COMMISSION AGENT, has on hand several GOOD MINING PROPERTIES, in whole or in part—GOLD, SILVER, GALENA, COPPER, BISMUTH, ASBESTOS, MANGANESE, &c., &c.—offering good investment for English Capital.  
 References: A. L. ELDER, Esq., Bishopsgate-street; A. J. SCRUTTON, Esq., Stock Exchange; and Editor of the MINING JOURNAL, London.

**CALIFORNIAN AND EUROPEAN AGENCY.**

509, MONTGOMERY STREET SAN FRANCISCO, CAL.

J JACKSON Manager

**THE "BEAUMONT"**  
**PATENT PERCUSSIVE**  
**ROCK DRILL**



(BEAUMONT AND FOSTER'S PATENT.)

The "BEAUMONT" DRILL is now offered to the public.

For the last three years it has been solely used with complete success by the Aqueous Works and Diamond Rock Boring Company (Limited), and Messrs. Beaumont and Co. in their several large contracts.

During this time it has been so improved and developed as to make it without doubt the best Percussive Rock Drill offered for Tunnelling, Mining, or Quarrying Work. Price and prospectus on application to the Manufacturer,—

**JOSEPH FOSTER,**  
 MINING ENGINEER

**BOW LANE IRONWORKS**  
**PRESTON, LANCASHIRE.**

THE AQUEOUS WORKS AND DIAMOND ROCK-BORING COMPANY (LIMITED).

CROWN WORKS, GUILDFORD STREET, YORK ROAD  
 LAMBETH, LONDON.

MESSRS. BEAUMONT AND CO.,  
 3, VICTORIA STREET, S.W., WESTMINSTER, LONDON.

Tripods, Tunnelling Carriages, Gadding Cars, Air Compressors, Air Pipes, and other Mining Machinery supplied.

**"KING AND HUMBLE'S"**  
**PATENT DETACHING HOOK**

To prevent over winding

**PATENT SAFETY CAGE,**

To suspend in Shaft in cases of fracture of Winding Rope,

Winding and Hauling Engines,  
 Special Centrifugal Pumps,  
 Weighing Machines, Ore Crushers,  
 Steel Castings, Mining Steel and Tools,  
 Winches, Steel Shovels, Pulleys,  
 Mining Machinery of every description.  
 Brick Machinery and Mortar Mills.

**Stephen Humble, Engineer, Derby.****W. F. STANLEY**

MATHEMATICAL INSTRUMENT MANUFACTURER TO H.M.'S

GOVERNMENT, COUNCIL OF INDIA, SCIENCE AND

ART DEPARTMENT, ADMIRALTY, &amp;c.

MATHEMATICAL, DRAWING, and SURVEYING INSTRUMENTS of every description, of the highest quality and finish, at the most moderate prices.

Price List post free.

ENGINE DIVIDER TO THE TRADE.

ADDRESS—GREAT TURNSTILE, HOLBORN, LONDON, W.C.

**JOSEPH RICHARDS, M.E.,**

Late of the Devon Great Consols, England. Late Mineral Agent for the Earl Fortescue, England. Thirty-one years' experience; eleven years on the Pacific Coast.

**JOHN TREGLOAN, M.E.,**

Forty years' practical experience in England and the United States.

CONSULTING AGENTS AND ENGINEERS

**THE PACIFIC COAST MINE AGENCY AND**  
**MINING PROTECTIVE ASSOCIATION,**

22, GEARY STREET (ROOM 11),

SAN FRANCISCO, CAL.

Mines examined (in any part of the World) and faithfully reported. The general Management of Mines undertaken.

TERMS FURNISHED ON APPLICATION.

Information given as to the status of any Mine on the Pacific Coast as soon after enquiry as possible. Fee for ordinary enquiry, Ten Guineas.

MINING ENGINEER.

**ALEX. DEL MAR.**

Mining Engineer, late Director of the United States Bureau of Statistics, Mining Commissioner for the United States Monetary Commission, &c., 216, SANSOME STREET, SAN FRANCISCO: Cable address—"Delmar, San Francisco." Branch Office, 61, Broadway, New York: Cable address—"Delmar, New York." London Agency, H. Stokes and Co., 24A, Southwark-street, S.E.: Cable address—"Delmar, London." Paris Agency, J. H. McDonald and Co., 13, Rue St. Lazare: Cable address—"Delmar, Paris."

**M. P. S. HAMILTON** (late Chief Commissioner of Mines for the Province of Nova Scotia), PRACTICAL GEOLOGIST, MINING AGENT, and MINING ENGINEER, HALIFAX, NOVA SCOTIA.  
 PURCHASES and SALES of MINING PROPERTY effected, with careful regard to the interests of clients.

**THE IRON AND COAL TRADES REVIEW.**

The IRON AND COAL TRADES REVIEW is extensively circulated amongst the Iron Producers, Manufacturers, and Consumers, Coalowners, &c., in all the iron and coal districts. It is, therefore, one of the leading organs for advertising every description of Iron Manufactures, Machinery, New Inventions, and all matters relating to the Iron Coal, Hardware, Engineering, and Metal Trades in general.

Offices of the Review: 7, Westminster Chambers, S.W.

Remittances payable to W. T. Pringle.

**DIE EPOCHE: ORGAN FOR POLITICS, COMMERCE, INDUSTRY, FINANCE, SCIENCE, AND LITERATURE,** is published in German every Tuesday, Thursday, and Saturday, at Passage roman, Rondeau, Bucharest, at 16s. per annum, exclusive of postage (about 6s. 6d.), and may be obtained to order through any foreign newsagent in London; or by remitting 23 s. direct to the Publisher, as above.

WHAT IS YOUR DISEASE—WHAT IS YOUR REMEDY?

GRATIS, free by post on receipt of Two Stamps to pay Postage.

**THE BOOK OF POSITIVE REMEDIES.**—  
 It is the Book of Positive Medicine for the Cure of certain forms of Debility and Nervousness, viz.—Mental and Physical Depression, Palpitation of the Heart, Noises in the Head and Ears, Impaired Sight and Memory, Indigestion, Pains in the Back, Headache, Piles, Constipation, Hysteria, Dizziness, Local Weakness, Muscular Relaxation, Nervous Irritability, Blushing, &c., resulting from Exhaustion of Nerve power, effect of Overwork, City Life, Worry, Brain Tell Intemperance, and other abuses of the system.  
 H. and H. SMITH and Co., Positive Remedy Laboratory, 26, Southampton-row, London, W.C.





PARIS, 1875. ORDER OF THE CROWN OF PRUSSIA. FALMOUTH, 1867. SILVER MEDAL, 1867.

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having exhibited the McKean Drill alone as the MODEL BORING MACHINE of the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

## THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24'90, 27'60, 24'80, 26'10 28'30, 27'10, 28'40, 28'70 metres. Total advance of south heading during January was 121'30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing that the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL; and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them a value unapproached by any other system of Boring Machine.

THE MCKEAN ROCK DRILL IS ATTAINING GENERAL USE THROUGHOUT THE WORLD FOR MINING, TUNNELLING, QUARRYING, AND SUB-MARINE BORING.

The MCKEAN ROCK DRILLS are the most powerful—the most portable—the most durable—the most compact—of the best mechanical device. They contain the fewest parts—have no weak parts—act without shock upon any of the operating parts—work with a lower pressure than any other Rock Drill—may be worked at a higher pressure than any other—may be run with safety to FIFTEEN HUNDRED STROKES PER MINUTE—do not require a mechanic to work them—are the smallest, shortest, and lightest of all machines—will give the longest feed without change of tool—work with long or short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or open work. Their working parts are best protected against and accidents. The various methods of mounting them are the most efficient.

N.B.—Correspondents should state particulars as to character of work in hand in writing us for information, on receipt of which a special definite answer, with reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL, IRON, AND FLEXIBLE TUBING.

The McKean Drill may be seen in operation daily in London.

**MCKEAN AND CO.**

ENGINEERS

OFFICERS,

5, RUE SCRIBE, PARIS

MANUFACTURED FOR MCKEAN AND CO. BY MESSRS P. AND W. MACLELLAN, "CLUTHA IRONWORKS" GLASGOW.



By a special method of preparation this leather is made solid, perfectly close in texture and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

HEPBURN AND GALE,

TANNERS AND CURRIERS,

LEATHER MILL BAND AND ROSE PIPE MANUFACTURERS

LONG LANE, SOUTH WARK LONDON

Prize Medals, 1851, 1855, 1878, for

MILL BANDS, ROSE, AND LEATHER FOR MACHINERY PURPOSES.

THE UNDERSIGNED, having secured the Grants of several VALUABLE MINERAL PROPERTIES (TIN AND COPPER), in the St. Blaize District, in the vicinity of Fowey Consols, &c., is DESIROUS of OBTAINING the CO-OPERATION of CAPITALISTS for their EXPLORATION. There is little or no risk involved in the undertakings, and the capital required in each case is very limited. R. SYMONS

11, Parade, Truro, 3rd February, 1881.

MAP OF CALLINGTON, CALSTOCK, AND TAVISTOCK MINING DISTRICTS.

Proposed to be published by subscription, a MAP of the ABOVE DISTRICTS, showing the names and boundaries of all existing sets, lodes, cross-courses, and every other matter which such a map should contain. Persons disposed to patronise the publication—at One Guinea per copy—will please send their names as early as possible to me. R. SYMONS, Mineral Surveyor, Truro.

February 3rd 1881.

TO PARENTS AND GUARDIANS.

AN ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and obtain a knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.

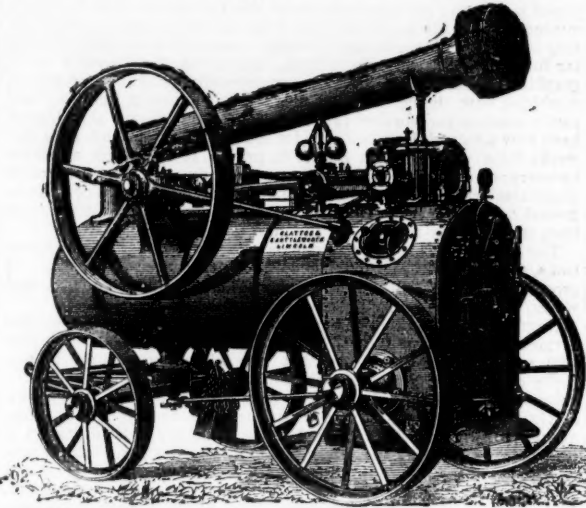
HERBERT C. JONES,

32, Wellington-street, Toronto, Canada Land and Loan Agency.

## 1880-81.—MELBOURNE (AUSTRALIA) EXHIBITION.

Portable Engine—Gold Medal.

Thrashing Machine—Gold Medal.



The Royal Agricultural Society of England have awarded Every First Prize to CLAYTON and SHUTTLEWORTH, for Portable and other Steam Engines since 1863, and Prizes at every Meeting at which they have competed since 1849.

## GOLD MEDALS, AND OTHER PRIZES,

Have been awarded to CLAYTON AND SHUTTLEWORTH at the various International Exhibitions of all Nations, including LONDON, 1851, 1862; PARIS, 1855, 1867, 1878; VIENNA, 1857, 1866, 1873;

for their

STEAM ENGINES, Portable and Fixed (For Coals, Wood, Straw, and every description of Fuel.)

THRASHING MACHINES.

GRINDING MILLS.

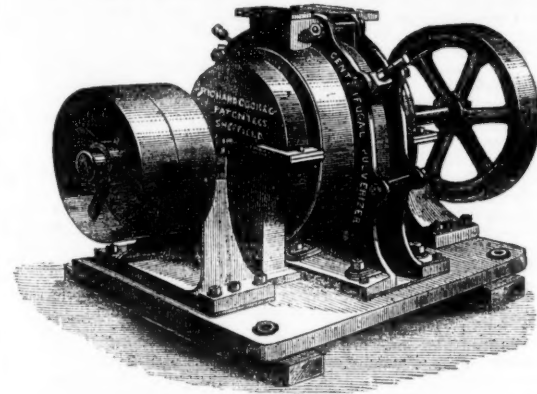
TRACTION ENGINES, &c.

Catalogues in English and in all Continental Languages free on application.

CLAYTON AND SHUTTLEWORTH, STAMP END WORKS, LINCOLN, & 78, LOMBARD STREET, LONDON.

## LUCOPS' Patent Centrifugal Pulveriser,

(Two tons per hour with 5 horse-power actual.)



For reducing to an impalpable powder, or to any requisite degree of fineness, all materials capable of being thus treated. CEMENT, CHEMICALS, GRAIN, COAL, COLOURS, PHOSPHATES, LIME, COPPER, TIN, ZINC, and other Ores with rapidity, completeness, and perfect uniformity.

THE ONLY GUARANTEED MACHINE FOR

## GOLD QUARTZ.

This mill consists of a circular iron casing, the section being elliptical in form, and is fixed vertically on a firm bed or foundation plate, a shaft runs through the centre of the casing on which is keyed a series of arms, in the extremities of which revolve two or more slightly oblong iron rollers, which, when put in motion, fly off from the centre and run upon the interior periphery of the casing, and by centrifugal force crush and pulverise the article under treatment.

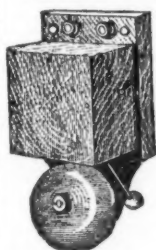
The effect produced by this system is most extraordinary in its practical results, the power required is small in consequence of the comparative absence of friction from the working parts of the mill, the combined results of the rolling action of the crushers and their impact by centrifugal force on the material, being the same in kind, but in degree far exceeding that of edge runners, the sides of the casing are formed as open wire sieves of the degree of fineness required, and a series of propelling blades attached to and revolving with the central shaft drive the material under treatment through the sieves as it is pulverised; by this arrangement the degree of fineness can with certainty be arrived at from coarse to extreme fine, and that with uniformity.

Intending purchasers can at all times satisfy themselves by sending the material they wish to operate on, and seeing it pulverised. Over 300 in use. Prices and testimonials free on application.

RICHARD COOK & CO., ENGINEERS, SHEFFIELD.

## SAX'S ELECTRIC SIGNAL BELLS,

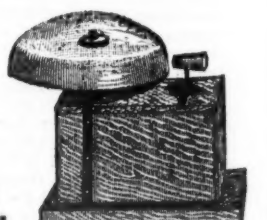
AND OTHER TELEGRAPHIC APPARATUS FOR MINES, &c.



Prize Medal - - - London, 1862.  
First Prize - - - Sydney, 1879.  
Prize Medal - - - Melbourne, 1881.

PRICE LIST POST FREE, ON APPLICATION.

JULIUS SAX (ESTD. 1850), 108, GREAT RUSSELL STREET, LONDON, W.C.



## MANCHESTER WIRE WORKS.

NEAR VICTORIA STATION, MANCHESTER.

(ESTABLISHED 1790).

JOHN STANIAR AND CO.,

Manufacturers by STEAM POWER of all kinds of Wire Web, EXTRA TREBLE STRONG for

LEAD AND COPPER MINES.

Jigger Bottoms and Cylinder Covers woven ANY WIDTH, in Iron, Steel, Brass, or Copper

EXTRA STRONG PERFORATED ZINC AND COPPER RIDDLES AND SIEVES

Shipping Orders Executed with the Greatest Dispatch.





## Original Correspondence.

## QUICKSILVER.

SIR,—We are sorry to find that "Investigator" has made another mistake, this time with the Californian. Speaking of the following tables exports by sea from California, he says—"It is not easy to account for our agreement during 1871—6, and difference after that date, without forming the only conclusion possible—viz., that Messrs. Bennett Bros. have made an error in the compilation of their matter in these latter years"—

Year.	Bennett.	Investigator.	Error.
1877.....	Bottles 46,280	52,471	6,191
1878.....	34,280	40,158	5,878
1879.....	52,180	62,172	9,992
1880.....	34,587	44,719	10,132

32,193

As to our sources of information, "Investigator" writes—"Of the sources of Messrs. Bennett Bros. information I am not aware, but deriving mine from a firm of well known and reputable brokers, the authenticity of figures used will bear examination."

We obtain our information direct from San Francisco, and are quite satisfied with it. "Investigator" specially mentions 1880. We give this year in detail. ("Investigator" states 44,719 bottles):—

Bottles.	Bottles.
Mexico..... 11,457	British Columbia..... 19
New Zealand..... 144	South America..... 1,190
China..... 19,488	New York..... 600
Japan..... 56	Panama..... 80
Central America..... 137	
Australia..... 1,416	By sea..... 34,587

And we have just found that the New York Shipping and Commercial List confirms our figures as to the other years—notably January 8, 1881, and January 18, 1879—so that in addition to "Investigator's" mistake with the Spanish, he is in error with the Californian to the extent of about 32,000 bottles, or about 41,000 bottles (together) over estimate; but this is not the worst, for "Investigator" (see Sept. 17) speaking of 1880, asserts—

Total production—bottles.	Estimated consumption—bottles.	Deficient production—bottles.
115,800	120,200	4,200

Now supposing we leave out the other makes ("Investigator" admits, see July 16, that the stock at Hong Kong was about 30,000 bottles, since reduced to 7500 bottles) and take England only we find—

Production imported—Board of Trade returns.....	49,500
Consumption—Board of Trade exports.....	16,050
Home consumption as per "Investigator" Sept. 24.....	13,500=29,550

Imported over production..... 19,950

This in 1880 alone. ("Investigator" actually claims, see Sept. 17, deficient production for 1880 of 4200 bottles). Comment is unnecessary.—Great Tower-street, Oct. 4. JOSEPH BENNETT BROS.

## GOLD MINING IN INDIA—THE COLAR GOLD FIELDS.

SIR,—In continuation of the detailed information given by "One Interested" in last week's *Mining Journal*, permit me to give a few brief extracts from an especially well-informed authority—the Bangalore Daily Post of Sept. 5—with regard to the Maharajah's visit. We are not surprised, it is remarked, to learn that the result of the experiment tried at Ooregum on Saturday was eminently satisfactory to the would-be vendors of that interesting property. From 15 to 20 ozs. of gold to the ton is a very pretty figure to conjure with; and it is a result which is eminently calculated to confirm our faith in that Providence which shapes our quartz, rough hew it how we may. It was but the other day that a London correspondent addressed to a Madras paper some adverse remarks concerning the Anglo-Indian projects, and it is continued. Our first impulse on reading these faithless repinings of an unbelieving spirit was to bemoan the scepticism of the age; but on second thoughts we smote a smile of serene satisfaction, for was not the Ooregum revelation about to rise upon the mining world with healing in its wings? True, the experiment seemed to the reasoning faculty to be of a somewhat risky kind; for might it not so happen that on this particular occasion a perverse vein might refuse to yield up its concealed treasure, and quartz, with its proverbial hard-heartedness, might disappoint all expectations? On abstract grounds there seemed no room to deny that it might be so. Even the best of mines, like the loveliest and sweetest of females, has its good days and its bad days—days on which, if you tickle it with a mamooty it laughs with a golden harvest, and days when the most violent operations of centrifugal pumps and elephant stampers are all in vain. What if the Ooregum shaft should be in one of its bad tempers on the occasion of the Maharajah's visit?

But such doubts, if they momentarily arose in our mind, were rapidly dispelled under the genial influence of more rational reflections. For between gold and a sovereign there ought to be some kind of magnetic affinity, and those who believe in the right divine will be disposed to agree with Mr. Runga Charlu in thinking that mines and royalties ought to co-exist. However this may be, it seemed to us quite impossible to doubt that the confidence shown by Major-General D. B. Beresford and the other vendors of the Ooregum property in the good behaviour of their mine would be justified by the event; and viewing the result in the gloomy light of the forebodings referred to by the London correspondent aforesaid, we cannot but regard everyone who took part in the proceedings of Saturday, from the Maharajah down to the engine-driver who sped him on his beneficent mission, as a public benefactor. The promoters of the Ooregum venture have trotted out a live Maharajah as a witness to the value of the property they want to sell, and it will not, we presume, be their fault if the exhibition fails to "produce a very great impression on the crowd." The special Providence which presides over "the industry" has been very kind to them. They demonstrated their confidence in the undertaking by inviting the Maharajah, the Resident, the Commander-in-Chief, and a number of other adepts, to come down "promiscuously" and "take pot-luck with them." The picnic was of the most delightfully spontaneous kind, and there was obvious in every detail that absence of prearrangement which adds an indiscribable charm to outings of this kind. Yet even under these circumstances the mine, thus taken unawares, produces from 15 to 20 ozs. of gold per ton!

If we had been asked beforehand how much gold we should like Ooregum to produce on this particular occasion, we should immediately have said 16 ozs. 1 dwt. and 23-943276 grs. Four ounces sent the shares of the Indian Gold Mines Company flying upwards a few weeks ago, but then came that unfortunate telegram of Mr. Severn's; therefore, 4 ozs. is not enough. Eight hundred ounces again is too much for any respectable mine in Mysore to produce, though it has been reached in the Wynaad with the utmost ease. We should indignantly decline to have a mine of that character in our neighbourhood, and if Ooregum conducted itself in that fashion we should at once have it transported outside the province. Mines, in order to justify the metaphor we have employed, should cherish a sort of maiden coyness. Sixteen ounces a ton is just about as much as they ought to allow themselves to yield, except under circumstances of the utmost provocation. If, therefore, Ooregum had consulted us on the matter we should have named the above figure as one just sufficient to give a healthy stimulus to the industry, and we should only have asked it to add the odd pennyweight 23 grs. and a decimal for the sake of scientific accuracy. Here, however, the mine has exceeded all our expectations. "From 15 to 20 ozs." is exquisitely vague, and yet sufficiently precise for all practical purposes. Human minds are so strangely constituted that, if the mine had yielded the precise quantity we have indicated, some eccentric person would have been sure to find fault with it for not giving a pennyweight more or a grain less, but "from 15 to 20 ozs." ought to satisfy everybody. It leaves the imagination unconfin'd, to roam at will in the delightful region between the fifteens and the twenties. Already, doubtless, the intelligence has winged its way along the electric cable to the Stock Exchange, for somehow no matter how modest a mine may be these things will get out. As far as we are concerned

we can honestly say that we wish the gold mining enterprise in this province all success.—Glasgow, Oct. 4. GUILTY WILLIE.

## INDIAN GOLD MINES.

SIR,—As an investor in these securities I have been much surprised to see the low prices ruling of late for almost all Indian gold mining shares. It would seem as if an industry which is only in its very infancy, and is destined, I trust, to exist and flourish into the far future, was already discredited. Doubtless Mr. Severn's heliographic puzzles, and the delay in commencing crushing operations, combined with the holidays, when there is "no one in London," will partly account for the low prices, but it seems to me that buyers have now a splendid opportunity for securing shares which in a few weeks time will be much higher in price. It is I think admitted by everyone that gold exists in Southern India, and in considerable quantities over a vast area, and that most, if not all, the companies floated here have their land within that area. The only question then is will it pay to work for the gold?

The answer to this question depends upon a number of considerations, such as yield of gold per ton of quartz treated, position of ground worked on, cheapness of labour, and abundance of fuel and water, and price paid for ground.

Numbers of Australian and foreign gold mines have paid excellent dividends on yields of 3 dwts. of gold per ton of quartz, and that with machinery not equal to that now almost erected on the majority of the company's lands mentioned below. Taking gold at a value of 75s. per oz., this yield of 3 dwts. represents a gross return of 11s. 3d. per ton. Now the actual cost of raising and crushing quartz paid by the Alpha Gold Mining Company (whose ground is now being worked by the Glasgow Company) was 10s. 10d. per ton, as stated in Mr. Brough Smyth's report, and this company does not work very long, or with the best machinery, or in the best manner. And no doubt the companies now about to begin work, especially those in the Wynaad, close together as they are, will be able to work at a much cheaper rate before long.

But all the assays as yet made show gold, averaging from 10 dwts. to 2 ozs. per ton, and I regard Mr. Severn's crushings are of no value whatever, the quartz being picked up at random in various places, and not taken from any one reef, and the stamps used being old, and nearly worn out. The Mysore Company is, I believe, now actually at work, but will publish no returns until such a quantity of quartz has been treated as to enable some reliable estimate of future results to be formed, but I confidently expect that all the sound companies will show a return of 10 dwts. per ton at least, and some of them a good deal more, especially as the reefs are opened, and worked in depth, it having been proved that they increase considerably in richness as they go down.

This estimate of 10 dwts. is a moderate one, having regard to the improvements in machinery and methods of treatment, yet it shows a dividend of 30 per cent. on a capital of 100,000l., with a crushing of 100 tons a day, which would be the work of only 40 or 50 stamps. I believe labour is cheap and plentiful, and can be easily trained and utilised, and that most of the companies have little to complain of as to water-power, and there is a plentiful rainfall in the Wynaad. As to the price paid for the land, the following table speaks for itself:—

Name of company.	Extent in acres.	Cost.
South Indian.....	1,200	£50,000
Indian Glenrock.....	3,000	50,000
Indian Phoenix.....	800	85,000
Indian Trevelyan.....	930	96,000
Indian Consolidated.....	1,920	275,000
South-East Wynaad.....	1,474	60,000
Devala Moyal.....	2,055	132,000
Rhodes Reef.....	50	130,000
Devala Central.....	986	70,000
Devala Provident.....	120	30,000
Mysore.....	750	55,000
Wynaad Perseverance.....	600	50,000
Colar.....	640	90,000
Ooregum.....	256	75,000
Tambracherry.....	6,000	120,000

The setting up of machinery on most of these properties is being rapidly completed, the monsoon not having done much damage, and I fully expect that by the end of this month, if not before, the South Indian, Glenrock, Trevelyan, and Rhodes Reef Companies will have commenced continuous crushings, and the Phoenix and Devala Moyal will commence early next month. The South-East Wynaad has had some trial crushings, but I have not heard the results, and the Mysore are at work.

I consider the Trevelyan and Phoenix Companies' shares to be very cheap at present, and I may add that the greatest energy is shown in pushing forward the erection of the Trevelyan machinery, and this company will be one of the first in the Wynaad to begin continuous crushings. The Glenrock, Devala Moyal, and South-East Wynaad are also cheap shares. I fully expect a smart rise within the next month, and would advise persons who bought at large premiums to average their price by now buying.

Dublin, Oct. 5.

AN INVESTOR.

## SOUTH AFRICAN DIAMONDS—THE KIMBERLEY CENTRAL MINING COMPANY.

SIR,—The first annual report of the directors (dated May 11) states that the company was originated by the owners of 18½ claims, who in April, 1880, amalgamated their holdings, "for the better and more economical working," at the nominal value of 8000l. per claim, thus starting with a capital of 149,000l. fully paid-up, exclusive of machinery—it being laid down as a principle of the company that "all machinery and plant for the working should be paid for out of profits, and no additional scrip should be issued excepting for claims." Up to Nov. 1, 1880, the end of the half-year, two claims had been added to the property, increasing the paid-up capital to 164,300l., and the income—derived from the sale of 27,658½ carats of diamonds, including 1394l. 15s. (this appears to be a clerical error for 1399l. 5s., which also affects the next total by 5l.) paid in for machinery on account of the two claims received into the company—amounted to 47,017l. 5s. (should be 47,022l. 5s.), out of which 8725l. 13s. 9d. was expended in machinery and plant; 20,109l. 9s. 9d. in working expenses; and 16,430l. in the payment of a 10 per cent. dividend. The quantity of blue ground hauled out was 29,413 loads, of which 14,960 loads were washed, leaving 14,453 loads on the floors.

During the third quarter 3½ claims were added, in one of which (No. 375) had been found previous to the amalgamation the Porter-Rhodes diamond (this is a 150 carat stone, several times mentioned in the *Mining Journal*), which in its rough state is unequalled in brilliancy and whiteness even by the celebrated Koh-i-noor; the addition of these claims increased the paid-up capital to 192,300l. The ground on the floor 14,649 loads were added, making 29,102 loads, of which 21,335 were washed, yielding 41,475 carats of diamonds, worth 63,092l. 10s., which with 5285l. 9s. received as bonus and *pro rata* from holders of claims amalgamated, gave 68,377l. 18s., out of which the directors declared 44,229l. (23 per cent.) dividend for the quarter.

The directors express regret that, owing to hindrances to the works by the accumulation of water in the mine from heavy rainfall, which was insufficiently provided against, they commenced the fourth quarter of the year under difficulties which have continued through the quarter; this, with other reasons which from the first had been under consideration, induced them to favour the amalgamation of the company's ground with that of neighbouring companies and claimholders, a very large proportion of which was on an average about 40 ft. higher than the Central Company's claims. This amalgamation gives a large and compact block of 75½ claims, which renders the Kimberley Central Mining Company the first and most important in the Kimberley Mines, both from its position and from the uniform value of its ground. The companies thus incorporated are—Messrs. Marais Brothers, Baring-Gould Brothers and Atkins, Price Tracey Brothers and Baring-Gould Brothers, Newberry Brothers, Moor and Maritz Gray Brothers, Morrison and Shepherd, G. Freeman, H. Kossuth, F. English (formerly Gifford's), and F. T. Gervers (formerly Sheasby's).

With regard to the claims of Messrs. Baring, Gould Brothers, and

Atkins, the directors were made fully acquainted with the probable encroachment of the reef, concerning which doubts had been expressed by some of the shareholders, and were satisfied that by accepting this block of 13½ claims into the company as representing 10 claims, and issuing scrip for the same, on that basis the permanency of area would be secured, and every share in the company representing the eightieth part of a claim can be looked upon as permanent property; and, further, seeing that it was incumbent on them to be in a position themselves to undertake the pumping of the water from the mine, they considered that the shaft and tunnel of this firm was indispensable. Under the supervision of Mr. Atkins pumps were fixed, and within six weeks of the amalgamation the mine was clear of water, thus proving to the shareholders that such a hindrance arising from increased rainfall need not occur again. The expenses of this work will ultimately not fall entirely on the company, as the directors have made claims on the Mining Board, which has agreed to reimburse the company in all payment, disbursements, and legitimate expenses. Previous to the amalgamation the company's plant consisted of two hauling engines—22-horse power, to 24½ claims; three washing machines and engines, capable of washing 400 or 500 loads per diem; horses, carts, &c. At the amalgamation were acquired the shaft and tunnel and tramways to floor; six hauling engines—68 horse power, to 51½ claims (making 90-horse power to 75½ claims in all); three washing machines and engines—500 loads per diem (that is, about 1000 loads per diem in all); horses, carts, trucks, &c.

To meet the outlay on this additional machinery a loan of 40,000l. was raised, to be paid in instalments over three successive quarters, "which can be met by the reserve fund which it is proposed should be instituted." The desirability of obtaining larger and more powerful engines and machinery, and making other improvements so as to obtain the largest results at a minimum cost, is occupying the consideration of the board. During the fourth quarter 9372 loads of blue ground were added to the 7749 loads on the floors, and 7572 loads were washed, leaving still on the floors 9567 loads to commence the new year. The diamonds obtained (20,681 carats) realised 30,218l. 10s. Mr. McHardy has been appointed claim manager, and Mr. George Newberry floor manager. The bonus and *pro rata* receipts during the quarter from incoming claim-holders was 40,295l. 14s. 2d., and the company's available balance 60,935l. 13s. 7d. Out of this 28,843l. (5 per cent.) was paid as dividend, and 24,513l. 17s. 6d. applied to the payment of 12l. 14s. 11½d. per share on shares up to No. 1923, this payment arising from the *pro rata* charge for machinery, &c., the property of the company at the time of the late amalgamation. The 75½ claims have been stocked at an average of about 7650l. per claim. The total area of the company's mine claims is slightly over 1½ acre, and they carry the right to 75½ acres of dressing-floors outside the mining area. Taking the average of the year, 89,814½ carats of diamonds having been produced from the washing of 43,867 loads, the yield was 2·04 carats per load, and the price realised 138,933l. 10s., or 3l. 3s. 4d. per load, whilst the working expenses were 64,314l. 14s. 7d. (exclusive of cost of machinery), or 1l. 9s. 4d. per load, but during the fourth quarter the diamonds obtained were 20,681 carats, worth 30,218l. 10s., from 7572 tons washed, or 2·73 carats, and nearly 4l. in money per load, but the working expenses were 24,681l. 8s. 3d., or 3l. 5s. 2d. per load, exclusive of machinery. The profit and loss account for the fourth quarter shows that to obtain the 30,218l. 10s. worth of diamonds the expenditure was:—Rates and licenses, 8305l. 2s. 3d.; cartage, 715l. 3s.; wood, 2230l. 12s. 6d.; wages and commission, 8356l. 15s. 6d.; water, 135l. 18s.; produce, 810l. 4s. 7d.; general expenses, 4127l. 12s. 5d. = 24,681l. 8s. 3d., as already stated. As assets, the company has the value of the plant, which has cost 52,290l. 13s. 1d.; the amount receivable from the Mining Board, which I presume is that represented by the item "pumping account," estimated at 7837l. 2s. 3d.; and a bank balance of 42,144l. 8s. 6d.; and the liabilities are the bills payable (41,336l. 10s.), which may possibly include the 40,000l. loan, although the accounts do not indicate that it is so. I believe these details will afford capitalists all the information they require.

Oct. 5

N. N.

## MINING IN NEW SOUTH WALES, &amp;c.

SIR,—There is evidently a strong interest being now taken in our mineral resources by the Mother Country, if I may judge from the enquiries about them, and the visitors who come out to inspect various properties, notably amongst whom seems to be Dr. Robertson (from Glasgow), who for many months past has been travelling about this and the adjoining colonies of Queensland, Victoria, and Tasmania, at a rate and with an unflagging energy which makes even the "oldest colonist" open his eyes at the amount of ground got over, and the iron endurance of the man. If England could only send us a few more like him now and again it would tend greatly to our mutual advantage, as he not only evidently thoroughly knows what he is about as regards minerals and mining, but can also drive a hard bargain with the shrewdest miners here, and so secure picked properties on such terms as should make his investments highly favourable and desirable ones to the home purchasers. I hear he has secured good tin and bismuth in our own New England district, as well as the famed Cloncurry, Peak Downs, and Mount Perry Copper Mines of Queensland, and has visited the distant Gilberton Silver-Lead and the Opal Mines of Cooper's Creek, on the extreme western borders of our sister colony. As regards the copper especially he seems to have succeeded in securing a virtual monopoly of the colonial resources in the North in the very nick of time, for the railways now opening up Queensland will make the several mines easily and cheaply accessible at last. Judging from what was done some years back at Mount Perry and Peak Downs, with stunted capital and expensive haulage, they should surely pay handsomely now, with low rates and a certainty of the mining being cheaply and effectively accomplished, together with the introduction of labour-saving appliances. If sufficient capital is only assured to enable the whole work to be carried out continuously and on a comprehensive plan (for the curse of all colonial companies is the desire to make a fortune at once, and before any mine is properly opened up gutting it of every readily available bit of ore, and at the initial stages neglecting to see that adequate reserve funds are provided to carry on operations with) splendid results should undoubtedly be obtained, and Australian copper mining be rescued from the depths to which want of proper means, and especially of good management, has sunk it. I understand the intention is to work these two mines with one company, and that already an influential colonial directory has been secured to work in consonance with a London board; but as I am not interested in either of them now (although one of the first shareholders originally in their palmy days) I only speak from hearsay. As to the Cloncurry lodes (also secured by our visitor) they have always been the desired ones *par excellence* of all Queensland; but the carriage was the *bete noir* of all would-be investors until now that the new Government line of rail proposed promises to open up the district within no distant date. Besides these special properties I understand he has also come across various others in Northern Queensland, several of which promise well, so that altogether he seems favourably impressed with his visit, and as from his large opportunities no man can be better fitted to give an intelligible account of all he has seen, we trust that if he is only as indefatigable in raising home capital to work our lodes as he has been in travelling and inspecting them that both England and Australia may find in him "Our Mutual Friend," for, if only properly worked, there are scores of mines here that should pay investors handsomely, and, if so, it would thus establish a perennial stream of profit between the Old World and the New, by the fructifying of its superabundant capital on our superabundant undeveloped resources.

The following extract speaks cheerfully for the future prospects of the Wentworth gold field, at Lucknow, as the yield is from pyrites only, and not taking the free gold from the same reef into account at all:—

LUCKNOW.—The Reform Gold Mining Company, Lucknow, have received account sales from London of 10 casks, containing somewhat under 2½ tons of auriferous mineral, sent by the steamer Cuzco, for treatment in England. The assay gave 192½ ozs. per ton. The net yield to the company after deducting all expenses was 1865l. 14s. 3d.

Our Copeland gold field is also not behindhand, as this extract, from the Hidden Treasure Company, proves:—

From the mining manager's report we gather that during the past three



months the tunnel has been driven into the reef, and continued on a course of payable stone for the distance of 135 feet. The crushing has begun on July 18, and at a partial cleaning-up on the 30th the produce of 130 tons of stone gave 1012 ozs. of amalgam, estimated to contain 50 per cent. of gold, which is now lying at the Australian Joint-Stock Bank, Copeland. The crushing is still going on, and the next escort it is estimated will bring over 1000 ozs. of retorted gold. The whole of the stone hitherto crushed from this mine has exceeded 4 oz. to the ton.

On this same field is the Prince Charlie Claim (full particulars of which I sent you in a previous letter), and the Mountain Maid—so that with three such rich reefs it should give miners heart to go on prospecting the others.

The news from Queensland, also, is very assuring, and the two following extracts speak for themselves, even to those unacquainted with mining matters:—

**CHARTERS TOWERS.**—The Mining Warden reports that 3704 tons of stone crushed at Charters Towers during the past month yielded 5288 ozs. The gold field has never appeared more healthy and prosperous. A crushing of 641 tons from the Etheridge Company's Claim gave 1350 ozs. A discovery of bismuth ore in considerable quantities has been made in some worked out alluvial ground on the Percy River, 25 miles from Gilberton. From 291 tons of quartz crushed at the Hodgkinson 1539 ozs. gold was obtained; 25 tons of antimony ore taken from the Emily Reef has been forwarded to Port Douglas, from whence it will be shipped to London by the next mail steamer. It is reported that large and valuable antimony lodes have been discovered 16 miles from Thornborough. The Queenslanders say, it is expected that by means of the diamond drill a number of new reefs will be struck. The prospects of the field are said to never have looked better, and nearly the whole of the claims on the Queen line of reef are still turning out plenty of stone.

**GYMPIE.**—Heavy finds were reported last Friday from No. 1 North Glamire and No. 1 North Phoenix. The former got 715 ozs. from 167 tons of stone, and the latter report 2334 ozs. gold from the crushings of the last three weeks. In addition, a patch struck on Friday night yielded 500 ozs. The general news from the field continues to be good. Amongst those which are expected to do really well are No. 2 North and No. 3 North Phoenix, and No. 1 South New Zealand, and the prospectors' tribute on the same line; the two latter companies being at the present time carrying on operations with a view to picking up a continuation on the March Reef, which has proved rich in the precious metal in the Golden Crown, and also in the South New Zealand mines. Large parcels of stone are being reduced from three of the four mines on the Glamire line of reef at the Gympie machines. The parcels finished recently include 97 tons from the Golden Crown, 650 ozs. retorted gold. A rough cleaning up from 314 tons of stone from the Glamire prospectors yielded 459 ozs. amalgam.

Taking it altogether mining is fast becoming a staple and profitable industry here, and under proper guidance there is plenty of room for remunerative investment of outside capital, but let the investors be first sure of the respectability of the parties they treat with before spending one penny. R. D. ADAMS.

Sydney, August, 1881.

#### OMOA AND CLELAND IRON AND COAL COMPANY.

SIR,—I notice a letter in last week's Journal from a shareholder in this company asking the support of other shareholders to bring some pressure on the directors and stir them up to more active management. I think "Shareholder" very nearly correct when he states that under more energetic management very different results would be shown. The property is undoubtedly valuable, the capital small, but large enough to work it satisfactorily, and instead of looking forward to a paltry 5 per cent. dividend at the end of the year it should be at least 15 per cent. Some practical mining men should be put in as directors, and very soon a different state of matters will be the result. MINING ENGINEER.

#### NOUVEAU MONDE GOLD MINING COMPANY.

SIR,—I entirely disagree with your correspondent of Sept. 10 ("A. C. B."), and think it quite reasonable that the shares of this company should be depressed, and that, solely by the absence of authentic reports, since we were told by our able committee's letter, dated July 4, that "very soon" they would have to report on the progress of Capt. Anthony's work, the result of which they were confident would be superior to our expectations. It seems by Capt. Anthony's only letter which has been made public, dated July 19, that he hoped the board had taken steps to put him in possession of ample funds to make a success of the property. Now, "A. C. B." says there is an ample reserve for working expenses. If any such fund does exist the committee would do much to restore the confidence of their constituents by stating the amount thereof. I fear a further issue of capital, combined with official reticence, may well cause the continued fall of the stock. To talk of delay in the transmission of news is not needful, seeing that the Potosi get their news regularly.—London, Oct. 7. W. J. B.

#### NOUVEAU MONDE GOLD MINING COMPANY.

SIR,—The report just issued by the directors of the Potosi Gold Mine has had the effect of sending down the shares of that company, and also those of the Nouveau Monde, whose property adjoins that of the Potosi. To anyone who will carefully read the remarks of Mr. Brenton Symons, the manager of the Potosi Mine, it will be apparent that this report should have a most encouraging effect for holders of Nouveau Monde. He says this, "But as the mine grows deeper the percentage will gradually increase, as in the adjoining mine of Mocupai, where, at a depth of 400 ft., Captain Marsh states the amount of pyrites to be 5 per cent., and to enclose over 40 oz. of gold per ton." In the early part of this year I was told at the offices of the company that in a few months time Potosi would be quoted at 10s., and Nouveau Monde at 3s. This was stated by one of the directors. The first portion of the statement has become absolute fact; regarding the latter, an intimate friend of mine has been assured by one of the directors that a dividend may be expected shortly. BONDHOLDER.

#### RICHMOND CONSOLIDATED MINING COMPANY.

SIR,—Again "Ursa Major" is growling in the Journal. Last time "the shaft was still in quartzite," now that ore in depth is abundant the captain has resigned, therefore "the ship must be sinking." Has "A Shareholder" a clerk in his establishment who would not resign if he could improve his position? Why then should not Mr. Rickard prefer to serve the Ruby and Dunderberg at a much higher rate of remuneration than he received from the Richmond? Has he not himself declared that the prospects of the mine were never more promising than they are at present? *Bona fide* shareholders do not be misled by a bogus one. If "Ursa Major" were really a shareholder would he dirty his own nest? Not he. He is simply trying to buy back the shares he has oversold, and if genuine shareholders would only keep a tight hand on their shares until the next quarterly dividend of 10s. per share is paid on the 13th of next month he will be cornered, and have to pay heavily, as his brethren the "bears" have had to do on several former occasions. A FIRM HOLDER.

#### EUREKA (NEVADA) MINING DISTRICT.

SIR,—I have the pleasure to hand you my usual budget of news received from this mining centre:—

The Sentinel has a most cheering announcement to make, one that guarantees the future of Eureka District beyond all peradventure. It is nothing more nor less than an immense development in the Eureka Tunnel. The tunnel is now in about 1900 ft. At several points stringers of good ore were encountered. Particularly was this the case at about 1100 feet from the mouth. Recently drifting was commenced on one of these feeders, which made off to the southward from the main tunnel. It was followed for a distance of 30 ft., when it suddenly opened out into a magnificent bonanza. The strike was made last Friday night, and a Sentinel reporter visited it on Tuesday. At that time about one-half of the face of the drift was in high grade ore. It has since come in all over and around it. There can be no question that it is a magnificent body. It is getting stronger with every stroke of the pick. It goes down and up, both. The ore was first cut on the floor of the drift. A single blast threw out over 30 sacks of the finest ore ever beheld in this district. About 5 tons were extracted yesterday. Its marvellous richness is its best feature. Average assays run over \$500 to the ton, and a great deal of it will go over \$1000. The ore is immensely rich in chlorite and black metal. Nothing half so good was ever found in the same quantity in this section of the State. The famous Eberhardt in its palmist days was no better. The depth at which the development is made, being about 800 ft. below the surface, fixes the future of Prospect Mountain and the district generally. It gives increased value to every mine in that section of the district. The Industry, Lemon, Sterling, Eldorado No. 2, and all other mines in the immediate vicinity must be immeasurably benefited by this strike in the Eureka Tunnel. It demonstrates that the ore goes down in the mines of Prospect Mountain, and grows richer with depth. A great benefit to our town must also ensue. Real estate here ought to be worth now 35 per cent. more than it was 10 days ago.

The south drift in the Eureka Tunnel is looking very encouragingly. Some exceedingly high grade ore, regular black metal, has been encountered. The extent of the body is not yet known.

There is a schism on foot to get together an immense mining property in this district for the London market.

Those of the Banner Mines are thinking of incorporating the property. It is a good mine if properly developed.

It is rumoured that W. B. Harrub will be tendered the superintendency of the Richmond. The Richmond is cutting out a station at the bottom of the main shaft.

E. E. Phillips reports having tapped the ledge in the Mammoth Mine, Diamond district.

The Dug Out will make a shipment of ore next week.

London, Oct. 6.

RUBY HILL.

#### GOLD MINING ASSOCIATION OF CANADA.

SIR,—The contradiction given by Mr. Humphrey, of the Gold Mining Association of Canada, to the charges or assertions of your correspondent, "Du Loup," is very decided and satisfactory, in last week's Journal, but it would have been well if he had also stated how far the water lead has progressed, and when he expects to begin the hydraulic for gold, from which so much was expected, as stated in the sanguine prospectus. The shareholders were led to think they should know something of the actual results before this. What has caused the delay?—Oct. 6. A SHAREHOLDER.

#### COMPETITIVE TEST OF ROCK-DRILLS.

SIR,—In last week's Journal is given an account of some trials of rock-drills on a block of Cornish granite at Cardiff. May we correct a slight error therein? The results noted by the committee were as follows:—

Normandy perforated 10½ in. deep in 2 min. 10 secs.	
Eclipse " 10½ in. " 2 " 25 "	
Beaumont " 7½ in. " 2 " 30 "	

London, Oct. 5.

A. NORMANDY, STILWELL, and Co.

#### ROCK DRILLS—COMPETITIVE TESTS.

SIR,—I have read with much amusement the account in last week's Journal of what is there termed the competitive test of rock drills at the Cardiff Exhibition on Sept. 24. There being such an absence of facts in the description given that no doubt you will allow me the opportunity of filling up the gaps. Having heard that the drills at the Exhibition were to be run before Sir E. J. Reed at six o'clock P.M. on the day in question, and, further, wishing to become a purchaser, if possible, of the most efficient machine, I attended punctually at the time named, and can, therefore, speak of what occurred from first to last. Up to seven o'clock Sir E. J. Reed did not make his appearance, and as the bystanders were anxious to see the drills in motion they were set to work in his absence. I may here mention that the Exhibition authorities knew nothing of any trial, nor had they arranged any trial, as there were neither medals nor any other awards to be competed for. On looking at the three drills in the Exhibition I was much struck by the difference in their sizes, and, on enquiry, I found that the Beaumont and Normandy and Stillwell Drills had each cylinders of 3 ins. diameter, whilst the Eclipse had a cylinder of 2½ ins. diameter only. Here you will notice that the Eclipse was at a decided disadvantage; but this is not all. After the drills had run I carefully measured the sizes of the holes bored by the Normandy and Stillwell, and Eclipse (the Beaumont having broken down, I took no further notice of it), and found, to my surprise, that whilst the hole bored by the former machine was only 1 in. in diameter, that bored by the Eclipse was 1½ in. in diameter. These two things—the difference in the sizes of the cylinder and bits—proved to me that the test was far from being a fair one, although it might pass muster to a casual looker-on. Had the bits used been equal in size there is not the slightest doubt in my mind but that the Normandy and Stillwell Drill would have been far behind in point of time, and would have been much more so had the bits used been in proportion to the sizes of the cylinders—a 2 in. bit for the Normandy and Stillwell as against the 1½ in. bit used by the Eclipse. Being present as an intending purchaser and a practical man, I took note of everything of importance, and so impressed was I of the superiority of the Eclipse both in steadiness and cutting power over either of the other two drills that I at once placed myself in communication with Messrs. Hathorn and Co., and, instead of an intended, have become A PURCHASER. Llantrissant, Glamorganshire, Oct. 5.

#### ANTIMONY MINING IN NORTH CORNWALL.

SIR,—I was on the mines yesterday, and the men are securing the adit level. In the end we have found the old men's workings, an adit down each way north and south on the course of the lode, how far we cannot say. Some good rocks of antimony have been taken out, which I should think would weigh over 1 cwt. We have had two runs—one last Saturday and one yesterday—owing to the ground being so heavy. I hope we shall have it cleared out by the time the gentlemen come to see it. I have sent a stone of ore to the Mining Journal Office for any one to see, but I would rather any one would come and see the mine, as there has been so much deception in mines that have started within the last year or two.

Permit me to add that Mr. Bowden's assay note was so inaccurately printed in last week's Journal that I think it preferable to reprint it in a more correct form.

COPY OF ASSAY, dated Liskeard, Sept. 24.—Antimony Ores: Fine Grained: Produce, 68½ per cent. sulphuret of antimony, and 12½ ozs. of silver to the ton.—Long Grained: Produce, 70½ per cent. sulphuret of antimony, and 6½ ozs. of silver to the ton.—M. W. BAWDEN.

OCT. 7 (TELEGRAM).—Since my report of Tuesday, I put the men yesterday to open up in the lode further south, and found good stones of ore, some of which I have sent to the Mining Journal Office for the inspection of those interested.

#### TIN MINING IN BREAGE, CORNWALL.

SIR,—Will you kindly allow me to explain some of the advantages to be gained by working the mines referred to by "Miner," in one company, to whom I partly replied in last week's Journal.—1. When the prospectuses are issued it will be seen by the plan accompanying them that the number of east and west lodes in the five grants is 16.—2. Polladras is situated in the lowest ground—it is 110 fathoms deep. In the limits are seven lodes, 50 of which traverse Gwens and Penhale-an-drea; three of them go through Wheal Singer sett, and two through Wheal Wallis; the latter mine has five and Wheal Singer four other lodes, including the celebrated Trueman's. Penhale-an-drea has four others, and I contend that by erecting an 80-in. engine at Polladras, and cross-cutting all these lodes, the greatest portion of the water throughout the grants will find its way to Polladras, enabling the development of the other four to be carried on at a comparatively small cost in regard to pumping machinery. Hence one advantage of working them together, otherwise the company working Polladras would find the others reaping a rich reward from their outlay, supposing other companies had them.—3. The royalties of three of these mines are owned by one lady. This being so, all the produce from them can and should be made merchantable at once, thus saving the erection of two stamping engines, their maintenance, and making two dressing-floors.—4. The other two mines are the property of a noble duke. The ore raised can all be prepared for market on either; this shows a saving of three stamping engines and the laying out of three dressing-floors, which I need scarcely add would cost several thousand pounds.—5. I am not sure but that all the tinstone from the five mines could be prepared for market on our floors—I believe it can be so arranged.—6. The five mines will be under one management, and will, consequently, add greatly to the economical outlay in the working, also saving engine-men, tin-dressers' wages, &c.—7. North Vor, formerly Trueman's, will shortly be at work; this is down about 88 fms. below surface. The lodes of this and Wheal Singer are the same. At North Vor a powerful engine will be erected, and which will, I doubt not, drain a large quantity of Singer water, so as to allow the latter to be worked at an easy expense. These advantages combined are of immense benefit to one company, whereas the costs and outlay would be much heavier if the mines were to be worked by five companies. Polladras would be the sufferer.—8. The line of railway to be made from Gweneer-road to Helston will, it is said, have a station at Nancegollan, about one mile to the east of these mines. This will not only be a great saving to this company in the transit of its minerals and materials, but will affect all the surrounding mines in a similar manner, saving time as well as money.—9. That these mines will be found rich for

the production of tin there cannot be a doubt, as Polladras from three out of its seven lodes, and from a very small space of ground, sold 102,000l. worth of tin ore, a large portion of which I have been informed was divided amongst the shareholders as profits, and this, too, when tin ore was selling at 38l. to 40l. per ton. It is now selling at over 60l., and is expected to reach between 70l. and 80l.; and, taking into consideration the many improvements in mining, such as in dressing, boring machines, blasting with dynamite, and other improved explosives, and in winding, is fully, I think, another 5l. per ton to the good; therefore, it only requires to drain these mines, when they will soon become largely productive and profitable.—10. All the lodes are drained by adits to a depth of from 24 to 30 fms., and between this and surface I believe there are hundreds of thousands sterling worth of tin that can be obtained from the several lodes at a very small outlay. There are also in these mines splendid cross-courses, flookans, and elvans that made the old Wheal Vor such a grand mine, returning over 2,000,000l.—11. New Great Vor Company are raising splendid tinstone from a lode near the east boundary of Penhale-an-drea, at only about 7 fms. deep, which also traverses our setts, Penhale and Po ladras.—12. From a letter now before me, dated Oct. 2, from a friend on the spot, it is stated that in Polrose Mine a lode has been cut in the 90 yielding 6 tons of grey copper ore per fathom, and that this lode runs through Penhale-an-drea, and all the length of Wheal Wallis, a run, I estimate, of 800 fms., and it is difficult to calculate its value. Should any of your readers require any information respecting these mines I shall be pleased to give it.

Plymouth, Oct. 5.

J. HODGE.

P.S.—"Miner" says he has known the Great Wheal Vor district for 35 years. He will, no doubt, see this letter, and if I have made any wrong statement therein I trust he will correct me.

#### COST-BOOK v. LIMITED LIABILITY.

SIR,—I fully expected that the very able letter from so experienced an authority as Mr. Kerly would have settled the controversy on this subject in your columns. The letter by "Verax" is one more illustration of the absurdly illogical conclusions which the disputants on both sides have occasionally indulged in. With one set of disputants the Cost-book is the only safe method to work mines profitably, and as the Cost-book cannot be used outside the Stannary Court jurisdiction, it should follow, therefore, that no profitable mines can exist outside of Cornwall and Devon! The other side argues as strongly in favour of Limited Liability. A long array of Cost-book mines of established repute is given to prove that the Cost-book is the place to look for profit—a trick of argument which the writer in Messrs. Watson's Circular has not hesitated to stoop to. It is no doubt as true as the dogmatic conclusion of the schoolmen—"he that drives fat oxen must himself be fat."

The success of a mine depends on two things. First, that it is a good mining property, properly worked; second, that its business is honestly and intelligently conducted. If these two elements are fairly embodied in the conduct of mining enterprise the advocates of both systems of management may well rest content without raising the question of Cost-book v. Limited Liability.

If the mining ground is bad no Cost-book will ever make the mine good; if dishonestly or ignorantly managed neither Cost-book nor Limited Liability will give mining experience or honesty of aim. The moral of the matter is that investors should look after their own business and trust it as little as possible to people they do not know, for no bad thing will be made good by the adoption of either system, and neither system is sufficient to prevent dishonesty or incompetency.

The proper and important distinction between the two systems, in my opinion, is that the one is based upon a method more or less complete of publicity, so that all concerned, or all the world if it will take the trouble, may know all about the business arrangements of the Limited Liability Company, and so speedily detect fraudulent or illegal conduct; the other concealment from the public, even from Cost-book shareholders who are not on the committee of management, or who do not take special pains to inform themselves of what is being carried on by the management. A Cost-book mine may have a debt of 20,000l. owing to the bankers, and the shareholders know very little if anything about it. They must pay the uttermost farthing as well as interest and costs. Such a debt in a limited company might lead to a wind-up, but no power exists that could make shareholders pay one penny beyond the unpaid calls upon their shares.

Nor is it correct that only Limited Liability Companies swallow up larger sums in promotion. It only requires a little concealed arrangement to make the public pay large sums in Cost-book mines no less than in limited companies—only promotion is not the word that describes the *modus operandi*. Premium in the market is then the expression employed, and the "Mining Market" very well understands its meaning.

The following is not imaginative, as probably business firms trading in Cost-book shares might be ready to admit. Tre, Pol, and Pen hold a lease of a mine sett, which may have cost any particular sum, but they want to have 4,000l. for it. Throgmorton-street wants to put it on the market as a Cost-book mine. This system requires that all original adventurers must come on the Cost-book by paying in exactly the same proportionate sum per share or part of the mine. It is determined that the new venture shall be divided into (say) 20,000, or any other convenient number of parts or shares, and that the original subscription shall be 2s. 6d. per share. This would give a stocked capital of 2500l. if all the shares were really taken up. The matter is mentioned in a quiet way, and a meeting is held to open the Cost-book. It soon transpires that the rush for shares has been so great that 16,000 have been subscribed for at the first meeting of adventurers, thus:—The purser 5000, engineer, 3000, broker 2000, butcher 250, grocer 1250, general dealer 2000, banker 1000, coal merchant 1000, surveyor 500. It is expected the outside public will want to have shares in such a capital concern, and it is firmly if not formally resolved that "one and all" shall hold on until the public are ready to pay a premium of say 20s. to 22s. for them, and that the dealings shall be through two or three firms who hold largely. Meanwhile the purser finds himself in possession of 2000l. with which to pay for the lease, buy an engine, and go to work with energy. He therefore bargains that Tre, Pol and Pen shall sell the lease to him, as the Cost-book mine representative of the adventurers for 500l. cash down, on condition that Tre, Pol, and Pen, shall show their confidence in the property by subscribing and paying for like the other adventurers, 4000 shares, and agree not to sell except through the brokers named. Agreed! There is not a share to be had. The mine is started. Strong professional reports are obtained from those who have long known the property. Not a share can be had.

An engine of great power is erected and started, followed by a dinner at the expense of the mine, at which there are many invited guests. Long speeches and much laudation mingle with postprandial enjoyments, and the adventurers determine one and all to hold their shares. After a short time a few shares are found in a moment of weakness to have changed hands for about 20s. to 21s., but the market price is understood to be 23s. to 25s. The public keeps up the demand and a market is made. Then Tre, Pol, and Pen are induced by strong solicitations and have, here and there, parted with shares, perhaps the greater part of their holding, and on quietly running up their accounts they find that at the market price of the day they can realise a total of 4200l., while other adventurers have been obliging their friends also. The mine being a good one prospers and becomes in due time one of many quoted in your weekly Share List, showing that, with 2s. 6d. per share paid, the last week's price was 23s. to 25s. Now, on this the fact appears to those who have the means of going into it that 2000l. actual working capital has been stocked, and the outside public have come in after the rate of 20,000l., and Tre, Pol, and Pen are satisfied! But this is premium, not promotion; and experience shows that the public is constantly paying such premiums for Cost-book mines—large sums of money—as really as they do in paying promotion in limited companies.

There is this radical difference between them, that a great part of promotion money of limited companies has to be primarily expended, generally in advance, on registration and legal charges, printing, advertising, postages, commissions, and the like, which are wholly



unnecessary in a Cost-book company, while the premiums on Cost-book shares pass directly to the holders and dealers in them. And it may be fairly believed that dealers in Cost-book shares, having a connection for that kind of business, greatly prefer the premium to the promotion, and probably be partisans of the Cost-book System. I believe, as a general rule, dealers in Cost-book shares make much more money in dealing in them than promoters in limited liability companies can, especially if such firms, and they generally manage to do so, get into the swim on the starting of such mines. Doubtless they do sometimes get into a bad thing which no Cost-book System can galvanise into life. But this is not often, and is generally to small extent, the numerous clients who believe in these dealers and go into mining things because the names of their share-dealing firms are associated with them, and thus they help to divide the burden of loss and gain.

With honesty and integrity of purpose either system has many good points; without these neither system can be implicitly trusted. Both require the attention of all who are connected with them, and investors should therefore look after their own business. LEX.

#### COST-BOOK AND LIMITED LIABILITY.

SIR,—I have no intention whatever of taking up the space in the Journal, or your readers' time, by reviving a discussion upon the above subject. I simply wish to correct some misapprehension which my letter appears to have caused.

In the first place, I have no desire to run down the Cost-book principle as applied to mines; on the contrary, I intended, if I failed in doing so, to express my opinion that it is a principle better adapted than any other for working mines. All I wished to do was to make clear to the investing public the position of shareholders under the Cost-book principle and the risks they incurred. [These general assertions, like those contained in the letter signed "Verax," are worthless.] With respect to the remarks contained in Mr. Watson's Circular, so far as respects the principle I entirely agree with him, and if that gentleman undertook the active management of a mine I personally should have little hesitation, provided I considered the venture a good one, in taking shares in it; I should feel satisfied it would be honestly conducted. But how is it possible for the general public to make themselves acquainted with the character of agents to whom their interests are entrusted? Having done so, and taken the greatest care, they may find their confidence misplaced. I agree with Mr. Watson that there is as much rascality carried on under the cloak of Limited Liability as under the Cost-book principle; the only advantage on the side of the former is that the investor knows the maximum amount of the mischief that can happen to him when his liability is limited to the nominal amount of his shares. I think the Cost-book principle is preferable to the Assessment principle, under which mines are worked in California. There a number of persons join to work a mine. They subscribe amongst them a certain amount of money. When the treasury shows signs of exhaustion the manager informs the directors that the funds will only hold out for another month or so, a meeting is called, and if the majority decide to go on with the venture an assessment is made of so much per share, to be paid within a given time. The shares of a defaulter are sold, but no personal liability attaches. It is obvious that those shareholders who wish to continue the venture are under great disadvantage. And I am informed that for this reason Americans prefer working their mines through English companies, and no doubt there is any amount of rascality practised under the American principle of working mines. Until investors look after their own interests, and cease to entrust their money to any adventurer who sends out flaming prospectuses, promising extraordinary advantages, for which there is not the slightest foundation, no amount of legislation will prevent the wholesale robbery which is now going on. Acts of Parliament are powerless to save people from the effects of their own folly.

Great Winchester-street, London, Oct. 5.

#### CARELESS INVESTORS, AND JOINT-STOCK COMPANIES.

SIR,—In the article under this heading in last week's Journal I see the poor Silver Valley is again dragged to the front. If shareholders neglect Articles of Association the directors of the Silver Valley have no wish to nor can they screen themselves from such neglect, as at a preliminary meeting I placed the Articles of Association before Mr. Wilde, the constituted Chairman of the company, expressly pointing out to him that clause relating to the manager's power over the directors. How, in the face of this and of our discussion and decision on it, and how also in the absence of certain documents, Mr. Wilde, introduced to me as a legal gentleman, and one of high standing, saw his way to allotment surprises me, and in absence of part of the board, to whom Reynolds or Harrison forgot to send notices of meeting for allotment.

In your report of the "Investigation" meeting of Aug. 16 Mr. Wilde says when he saw the Articles of Association he retired. Your reporter is doubtless at fault in this, as he is also in his other statements very prejudicial to the directors. It is impossible Mr. Wilde could have said this. We know nothing of Reynolds in his various characters of vendor, promoter, secretary, &c.

At a meeting after the unfortunate allotment, in answer to the directors, he (Reynolds) stated he would see that Mr. Harrison had that objectionable clause in the Articles of Association nullified. At a subsequent meeting, when we removed the books, &c., from the office to the bankers of the company, Mr. Reynolds' clerk (Mr. Harrison's personator it turned out) informed us Mr. Harrison was in Paris. This gentleman's dismissal we took entirely on our own responsibility, giving written notice of such to the manager of the bank.

With regard to the "Investigation Committee" I only received one invitation to attend, at which time, as I stated in a letter, I was absent in Cornwall. The Aug. 16 meeting Mr. Stephenson told me of, to whom I explained the most urgent matters would prevent my attendance, and, after conferring with my co-directors, I wrote a few hurried lines, which I handed to Mr. Stephenson to give to the Chairman if necessary. I see Mr. Scott quotes from my letter, and strangely complains of want of courtesy in not answering the invitation to attend.

The statutory meeting which we called was cancelled by the liquidation, and I understood notice was given to that effect. I used the words "late" co-directors, as we were deprived of office by the liquidation. Mr. Scott is quite right in one sense. So long as there was a chance of saving the company no director left his post except Mr. Wilde, who some time prior to his final resignation had resigned the chairmanship.

I must add that lately from further enquiries into the Silver Valley property I fear the shareholders will find their mistake in forcing liquidation. I think Reynolds would have been much better dealt with for their benefit by the directors as facts turned up. Though hard pressed by him (as Mr. Henrys) we declined paying another farthing towards the purchase. This was after Mr. Wilde's resignation.

Threadneedle-street, London, Oct. 5.

O. G. LAMBART.

#### BELL VEAN MINE.

SIR,—That the Gwennap district seems to be destined to re-establish its ancient reputation in the chronicle of mining successes is shadowed forth by the various reports of discoveries newly made that reach us in such rapid succession in recent times; indeed, apparently it only required the stimulus of higher prices in metals to bring about not only the re-working of mines abandoned in the time of the great depression but also the opening out of new ground, which is still to be found in abundance in this district, and which must inevitably lead to ever increasing discoveries of both tin and copper in this highly mineralised ground, and now that the consumption of tin is outstripping the world's supply of this metal, and that copper will be needed in increasing quantities, we may fairly suppose legitimate mining for these metals is on as sound a footing as can well be hoped for, with every prospect of remaining so for a very long time to come. The recent great discovery of tin in Bell Veau Mine is evidence that as great riches are still hidden in Gwennap as were ever brought to light in days gone by; indeed, I have never seen such stones at any mine as those brought up from

the newly discovered lode in Gobbin's shaft. The vans of this lode produce 14½ cwt. of black tin to the ton of tinstone—nearly solid tin, in fact; and as this is found at no great depth it must be supposed that as progress is made in the workings more gratifying results will be obtained as greater depth is reached, the more so as the favourable situation of Bell Veau, which is completely surrounded by the historical mines of the district, warrants the presumption that the rich lodes of its neighbours which yielded millions in profits will be intersected as the ground is more vigorously worked.

-GWENNAP.

#### DEVON FRIENDSHIP MINE.

SIR,—I am glad that a correspondent has drawn attention to these famous mines in last week's Journal. If I mistake not they were for years about the richest copper mines, not only in the Tavistock district, but in this country. All the immense returns and profits came from the north lode only; but they drove a cross-cut for about 170 fms. from one of the deeper levels to intersect the north lode, and found it also very rich, but it could not be opened on properly without some capital. It is this latter lode which I believe the company is about to work energetically, and as there is already a shaft sunk 60 fms. or more, there will likely be some good discoveries soon after the water is drained, which will not take many weeks. In two or three weeks they will likely be in the 30 fm. level under adit, and as they have driven the latter a long distance in a large lode, very productive for arsenical mudic, mixed with good copper ore, they will then be able to drive at once 30 fms. deeper, and under this course of mudic, with as great a certainty as can be of opening largely increased quantities of copper, which in these mines is of high quality. It is estimated that the ground driven through by the present company will yield arsenic of the value of at least 30,000*l.*, which alone will give a substantial profit. But this is a flea-bite to what is yet to be got out of the stuff accumulated for so many years at surface, and, if your correspondent is correct as to the 500,000 tons broken in the levels of the old mine, besides what is laid open in the lode there, the company will make enormous profits.—Oct. 4.

W. X.

#### MINE MANAGEMENT AT GUNNISLAKE.

SIR,—The Journal of Sept. 24 contains a letter purporting to be written by "James Tozer" (Tavistock). This letter contained a severe reflection on the management of Gunnislake (Clitters) Mine, the mine intended, though no name was mentioned. Now, Sir, as a member of the committee, I beg leave to say that though I have made diligent enquiries I cannot find any such person as "John Tozer," nor is there such a name in the list of shareholders. The writer has, therefore, made a stab in the dark, and has not the courage to affix his name. This letter, though practically anonymous should not be treated with even the consideration due to an anonymous communication which is intended to appear as such, but as a communication which pretends to be genuine and is not. I beg to assert that the letter contains a tissue of falsehoods from the beginning to the end. There is just truth enough to cause the mine to be identified; but as one great poet has said—"A lie which is all a lie can be fought outright; but a lie which is half a lie is a harder matter to fight." Still, the letter contains falsehoods which will, no doubt, be fought outright. The writer insinuates that the manager takes commission from merchants who supply goods. This implies corruption on the part of the merchants as well as on the part of the agent. I call on the writer for his proof. It is very easy for a cowardly libeller to make a statement reflecting on the honour of another. I challenge him to substantiate this. The account of what took place at the meeting of the committee is untrue. What we did we did after much careful deliberation, and we are quite willing to answer for our conduct at the general meeting. The committee hold between them quite a quarter of the mine. The fact is this mine is the gem of the district, and it is one of the best managed; we are making good profits, and I sincerely hope that distant shareholders will not be induced to part with the property for a song just because some cowardly and disappointed agent, or merchant, or "bear" chooses to write down the committee and manager as asses and rogues.—Callington, Oct. 5.

EDWARD NICOLLS.

#### WHEEL JEWELL COPPER MINE.

SIR,—The prospects here were never so cheering as the reports and sales of ore prove. They will have 100 tons of copper for sale this month; they sold 146 tons last month, being 246 tons for the four months, and there is every prospect of their raising 100 tons of copper ore monthly in about three months time, with every prospect of further improvement. This snug little mine is opening up well, but not beyond the expectations of those who know its value. The mines surrounding have proved immensely rich for copper, and very profitable. Wheel Jewell is very shallow yet, their deepest point being only 70 fathoms; there are 12,000 shares, and at 12s. 6d. to 18s. they are certainly worth looking after. They are the cheapest copper shares in Cornwall; at 18s. per share it is only 9000*l.* for the whole property as it stands.

INVESTIGATOR.

#### EAST WHEEL LOVELL.

SIR,—In all my experience of mines and mine shares I never witnessed one with half the good prospects of almost immediate great success, whose shares dropped so low as those of East Wheel Lovell. Working four distinct lodes, all of which at the next level can be worked by tributaries, which will give handsome returns to the shareholders. In addition to the above there will be a considerable amount of valuable tin ground laid bare, left by former workers, immediately available. That the shares must advance rapidly appears certain, and I should not be surprised to see them within six months over 40*l.* each.—Oct. 6.

MINER.

#### THE SHROPSHIRE LEAD MINING DISTRICT.

SIR,—It must be a great pleasure to all who are in any way acquainted with this district to read the *Mining Journal* of last week, because there is so much and such good information about some of the great mines here; and especially it is satisfactory at the present time, and fills the future with great promise, to find some of the first, if not the very first, mining gentlemen of the day taking energetic interest in the working of some of the mines, and who give us very plainly to understand that they are fully satisfied about the permanent richness of the lodes here when they are properly open and skilfully worked, and that they have already plans under consideration for increasing their interest in the district by opening up other mines in the district that are known to be rich, and are awaiting capital to put machinery to work upon them, and get the riches that are lying in the lodes in these massive mountains to surface and to market, and that they contemplate opening a new market in the district for the lead ore by forming a company for smelting at the Pontesford Smelting Works, and giving the shareholders in the mines the chance of becoming their own smelters. This we consider a first-rate idea, as there is good railway accommodation and plenty of coals in the immediate neighbourhood of the said smelting works. And we gather from the remarks made that the Mytton Dingle Mine, which adjoins the rich Old Snailbeach Mine for near a mile in length, is taken up by them, and will be made into a company forthwith and set to work, and the rich ore already discovered there only a few fathoms from the surface promises them a rich reward.

A SHROPSHIRE MINER.

MINING IN CARDIGANSHIRE continues to improve. The Wemyss mine has now a course of ore, mixed lead and blende, for over 27 ft. wide, all good saving stuff. Adjoining as this does the old Frongoch Mine, and being on the same lode, there is little doubt but that the Wemyss will rival in productiveness its neighbour. As previously announced, there has been a very rich discovery of lead at the old Nant-y-cria Mine. In the northern part of the county the new dressing machinery at the North Cardiganshire Company's mine is nearly completed. A good course of ore has been found at Blaencaelan standing whole beside the old levels. Working at the shaft on the Cambrian Mines has been resumed, and it is intended to fork the

water from the old Esgair-hir Mine, which ought to have been done long ago, as there is a fine course of ore in the bottom. Judging by appearances the Bryn-Dyfi Mine will soon be able to sample ore for market. Tan-yr-allt continues to make regular returns of ore. The new discovery at Penrhyn Gerwen is being opened upon, and the lode in the 10 fathom level is now over 12 feet wide, with spots of copper for the whole width. The district has lately been visited by several London capitalists, and with the price of lead improving no doubt the attention of investors will again be drawn to the mines of Cardiganshire.

[We are requested by the writer of these articles to state that all author's rights are reserved.]

#### HOW TO CHEAPLY PREVENT ACCIDENTS UPON BREAKING INTO OLD WORKINGS—No. II.

9.—While, nevertheless, all the above distances sum to 698 links along the straight bearing or any co-ordinate of *b*, which being laid off from the starting point gives  $b + x = b + 2$  links on any two chain per inch scale. Giving then this scale's minimum error at each point required, and therefore making them all similarly accurate instead of anything between accurate and 2 chains off in 200 of such points and bearings as now usually planned. Thus or co-ordinately planning all mining plans, points direct from their shafts can indeed give a widely different result in large collieries to the scale and protractor plotting now most commonly used. In short not a step can be taken in this latter planning without accumulating unobservable errors that are only either seen or eliminated upon any such scales by co-ordinate or by equivalent means of planning. From which it will be plain that none of the often numerous mining points involved in these plans can be planned as they most commonly are now at all to fairly prevent these accidents, because they are usually plotted directly contrary altogether to the spirit of all accurate engineering geodesy which amply is, the less are the operations used to get at any point the greater is its real accuracy if all else be the same.

10.—But it is not these things alone. For all adjoining mining plans must be accurately fixed together along their respective boundaries too to prevent these accidents. Hence several accurate and permanent surface points must be given along all mining plans boundaries to properly compare any two plans. How can these numerous mining plans now existing or yet those now being made without any such adjoining objects at all be accurately fixed together or used here at all, when as all ought to know they contain just their own boundary stream or fences and underground workings and shafts only? How can any two of these be surely or properly used at all to apply to prevent any of these accidents? With these boundaries only the most startlingly useless and indefinite objects we can get—namely, uneven and circuitous brooks, and the like or may be a single crooked boundary fence, stubbed up, altered, or like the shafts, obliterated and often not approached by its adjoining concern at all or gone long before these plans are even wanted here at all. Besides which showing all underground workings to the daily variable magnetic meridian whose variations are ignored mainly or altogether as a general rule by such plans year after year from first to last. No mining engineer however capable can accurately compare any two such plans, much less amply prevent any of these accidents with any plans, until all the foregoing essentials are put into them instead of these being regularly neglecting now in mining plans. Besides these permanent objects along all concerns, boundaries, and adjoining properties shown upon all such plans must be accurate to prevent them accelerating these accidents, any rendering any accurate comparison being impossible if at all otherwise. Thus no accurate comparison is possible of any plans whose surface points are got by any inaccurate means. Are not too many of such means used daily even in several of the highest or at least most influential mining offices in our land? When, to wit, several enlarged Ordnance maps for the boundary points of mining plans; again, others repeatedly use the underground method already referred to, or what is almost equivalent test to get such upon the surface as well as in their planning practices, which are moreover recommended, yet at times in our literature as well as actually practiced daily. It can, however, only be want of knowledge that permits any such means to be used at all, for otherwise all such users know, of course, no really accurate comparison of such plans is possible except accidentally. Whatever some mining M.I.C.E. even as well as others yet say or think at all about Ordnance maps being accurate, and hence think they may at times make larger scale plans equally accurate off them as they do or say that the Ordnance authorities used any such field practices for their plans at all, and again, that any other branch of civil engineering does so for accurate purposes, is simply to betray ignorance of the spirit of accuracy in all engineering geodesy, as shortly summed up at the end of paragraph 9 altogether. And to go on ignoring it daily even in these vitally important matters too year after year when still so despitely, no doubt, lots of mining hits as shown previously, which neither seeing nor knowing their plans real failings at all instead of always eliminating them all. Until everybody happens to find the effects of one then other officially reported in these accidents, for whose costs our owners hitherto have promptly dived into their pockets, and workmen paid with their lives and their families wants all yet anyway officially laid at the door of misleading plans now for years. Therefore, let us now hope, so long as all know these things remain as they are far too commonly now, it is clear that these occurrences will needlessly remain as they have been hitherto despite any big or inordinately interested influence against them too until the foregoing simple truth get used or forced into all, and their relative causes are thus removed instead of them being *vice versa* nearly altogether as now.

11.—Yet again all deposit mining plans to avoid at will any sudden or unknown flow of water or gases out of any approached old workings. How is it then these standing feeders of water, their main directions of flow, up staples, and along any shafts respective measures as well as underground workings, through our coals, slips or cleat along our lines of full dip as well as by all faults, directions, and amounts of throw, are not all shown upon all our mining plans instead of now being practically given at all as a general rule, just to prevent us hitherto using these at all to preserve either life, limb, or property. Without them, therefore, we again see how past plans have failed in needful data and when carelessness was avoided. In any such case all ought, moreover, to see now how to eliminate any such failings in future and so how is far better to prevent these accidents in any workings that are in the same vertical planes hereafter than these have been at all generally prevented in the past.

12.—Our coal and metal workings, however, are in widely different vertical planes which, therefore, brings us to the second stage of our subject. When we have to make all accurate plans, clearly show all needed for preventing any of these accidents in any vertical planes whatever, that is plainly show the exact differences of vertical altitude of all their main working points, without any sections at all, by nationally uniform and always comparable figures. Then all manifestly have not the horizontal positions of any required workings alone, but all their main points vertical difference of level also shown in feet upon all mining plans. From which, and water gases, well known laws of flow being directly as the differences in any such altitudes, we get their maximum velocity at sight of their respective plans by the well known rule  $v^2 = 29h$ , whence  $v = 8.03 \sqrt{h}$ , if *h* be any point's figures or altitudes difference in feet. For example—should this head or height fallen be 100 ft., then we have a maximum velocity of  $8.03 \sqrt{100} = 80.3$  ft. per second neglecting friction. Or making any run of water freely fall over a low level, sill, or notch any exact suitable number of feet wide fixed in across an airway, then when the water behind the sill forms a comparatively still pool, the number of cubic feet flowing per minute and per foot in width of sill is  $5.15 \sqrt{h^3}$ , when *h* is inches deep falling over any such sill or weir, which is equivalent to  $214 \sqrt{h^3}$ , if *h* be feet falling over, inclusive of friction, which data being always put upon plans shows how any water or gases flow along their respective workings, their vertical shaft sections show the measures these mostly run along always, hence by keeping ample bore holes in front as already enforced, we shall often allow for the great pressures of our gases at times 420 lbs. per square inch; and, therefore, we then get all neces-



called the statutory meeting, as required by law. I have no doubt this law is a good one for ordinary companies, but for one in which the work is to be carried on at a distance of thousands of miles, and for the working of which many preparations are requisite, further time would have been more convenient, and we would rather have met you when we could have told you some commencement of our works had been actually made. As it is, all I can tell you is of the preparations made towards commencing our work. Our company was registered, as you probably know, on June 11 last; the shares offered to the public were more than fully subscribed by 1520 applicants, and accordingly the directors at once proceeded to work. The first point which occupied our attention was the title deeds of the different estates forming our property. Instructions were at once sent to India to thoroughly investigate these; and the result being entirely satisfactory, we, with the full advice of our able lawyers in this country, proceeded to make such payments as were due under the terms of our agreements. The next point for our consideration was the agency to be employed in India. Looking at the large interests which had to be superintended on our valuable estates, after much consideration, we came to the conclusion that it was advisable to place in charge a resident agent of large Indian experience. Had there been only the working of mines to supervise a mining engineer might have been entrusted with the general superintendence, but there is much more to be done than merely working mines. Our agent will have to see that the agreements under which we hold our estates are fully complied with, the necessary rents paid, &c., &c. He will have to provide houses for the staff and machinery, to organise an efficient office, and to start a proper system of accounts, make thorough arrangements for the transport of much weighty machinery from the coast, provide the native labour required by the mining staff, to look after our valuable and extensive forests, making arrangements for disposing of such timber as we may be able to spare, to enter into negotiation with the settlers for an extensive area of land for the planting of rubber trees, to work such of the coffee plantations as may appear from examinations to be worth keeping up, and to carry out many other duties which I need not further detail. To obtain such an agent we advertised largely, and had many applications



tions from men of ability and experience. Those whose qualifications appeared of the highest order were interviewed and interviewed by the directors, and the selection of the board fell on Col. Henderson, whose high testimonials justified the board in hoping they have secured a most efficient agent. In the way of mining staff, under competent advice, we determined that, to begin with, it should consist of a mining superintendent, an assistant superintendent, a mechanical engineer, and four miners. Careful attention was given to the selection of these men. In the case of the mining superintendent whom we had selected, some difficulty arose, and we were eventually disappointed about a gentleman whose services we thought we had secured, but I am glad to be able to tell you that only to-day we have entered into arrangements with another extremely able man, who will shortly proceed to join his appointment. The other officials I have mentioned are already on their way to India, and will very shortly be at work. In the way of machinery, you are aware that the vendors, to avoid delay in commencing work, had, previous to the formation of the company, ordered machinery estimated to be capable of crushing ore at the rate of 100 tons per day. That machinery is already at Madras, and as soon as our staff arrives, and the sites for our works have been selected and prepared, every exertion will be made towards its speedy erection. But, of course, in addition to the mere machinery requisite for crushing the ore large quantities of other machinery, and of tools, of all kinds of appliances for extracting the gold have been called for, and the utmost has been done towards carrying out this work. Large consignments are already on their way to India, and the shipments will be nearly completed on Saturday next. While on the subject of machinery, I may mention that, while we have eventually to use as our chief motive power the large water supply which it is reported we possess on our estates, full arrangements have been made for starting the work by steam power, so that no delay may occur in at least making a beginning in our work. The stamps we have sent out are those known as "elephant stamps," and we have every reason to believe that they will prove most efficient, but it must not be forgotten that, as regards water machinery, will be most efficient in the gold fields of India, we are still in a tentative state. Experience will alone show what are the most effective and economical machines both for crushing the ore and extracting the gold. I have, therefore, as far as I can, what has been done towards starting the work on our valuable property, and I trust at our next meeting we shall be able to tell you not only of preparations made but of results accomplished.

Mr. WILLIAM ABBOTT thought that it would be interesting to the shareholders of this and other companies if the Chairman would state distinctly whether he and his colleagues were as well satisfied now with the prospects of the gold mining enterprise in India as they were when they first allowed their names to appear upon the prospectus. He was aware that the Chairman was also connected with the Indian Trevelyan, and therefore his opinion would perhaps have more weight than if he was speaking for the Consolidated alone, which was more recently introduced, and therefore its operations could not be so fully matured. (Hear, hear.)

The CHAIRMAN, in reply, said that he had much pleasure in stating that all that had come to his knowledge since his connections with the gold mining companies had tended rather to strengthen his faith in the probable result of the working of them, and he thought that he might safely say in giving expression to that view he was also expressing that of his colleagues. (Hear, hear.)

Mr. WILLIAM ABBOTT said, in the risk of being troublesome, he hoped he would be allowed to put another question, which was, whether the directors were fully alive to the importance of co-operating with the other companies. For instance, had instruction been sent to the manager of the Indian Trevelyan, of which the Chairman was also a director, to render every assistance in his power to the manager and miners of the Indian Consolidated, or indeed any of the other companies, as he considered that the successful development of gold mining in India ought to have a common interest. (Hear, hear.)

The CHAIRMAN stated that the full instructions had been sent out to the staff of the Indian Trevelyan Company in India to render every assistance in their power, and the quite reverse of what he developed at both Englebert and Heidelberg, and he believed that some good would be met with. With regard to Aurora, the prospects he said had much improved, and he expected that this mine would make good contribution towards the profits of the company for the current year. The negotiations for the sale of the ironstone mines he said had been suspended, but with every improvement in the iron trade on the Continent the chances of advantageously realising these mines were increased. Mr. FYLE seconded the motion, and it was carried unanimously.

The CHAIRMAN then proposed in complimentary terms the re-election of his colleagues—Messrs. Albert Wynne and William Logan—and a SHAREHOLDER having seconded the motion it was carried unanimously.

Mr. Woodington (the auditor) was also re-elected, and a vote of thanks to the Chairman for presiding brought the proceedings to a close.

#### BAVARIAN LEAD MINING COMPANY.

The annual general meeting of this company was held on Tuesday, Mr. BRINSLEY NIXON in the chair.

The SECRETARY read the notice convening the meeting, and the report and accounts, particulars of which have already appeared in the Journal, were taken as read.

The CHAIRMAN, in moving the adoption of the reports and balance-sheet to June 30 last, said that he had very little to communicate to the meeting beyond what had already been stated in the reports, and especially in the exhaustive report of the manager. He regretted that the result of the year's working was not more favourable, and said that this was the first time that the payment of the preference dividend had been postponed. He used the word postponed because, in the first place, the dividend was cumulative; and, in the next place, the directors hoped that if lead continued to rise they would very soon be able to make good the dividend. He stated that the price levels were about to be developed at both Englebert and Heidelberg, and he believed that some good would be met with. With regard to Aurora, the prospects he said had much improved, and he expected that this mine would make good contribution towards the profits of the company for the current year. The negotiations for the sale of the ironstone mines he said had been suspended, but with every improvement in the iron trade on the Continent the chances of advantageously realising these mines were increased. Mr. FYLE seconded the motion, and it was carried unanimously.

The CHAIRMAN then proposed in complimentary terms the re-election of his colleagues—Messrs. Albert Wynne and William Logan—and a SHAREHOLDER having seconded the motion it was carried unanimously.

Mr. Woodington (the auditor) was also re-elected, and a vote of thanks to the Chairman for presiding brought the proceedings to a close.

#### THE LINARES LEAD MINING COMPANY.

The half-yearly general meeting of shareholders was held at the offices of the company, Queen-street Place, on Thursday, Mr. WM. COX in the chair.

The notice calling the meeting was read by Mr. HENRY SWAFFIELD (the secretary), and the report and accounts were taken as read.

The CHAIRMAN said it became his duty to move the first and only resolution, which was that the report and accounts be received and adopted, and in doing so he would make one or two observations. In some kindly remarks which appeared in a mining paper, after the last meeting, the editor said that the Chairman of the Linares Company, in his speech, played upon one note and one note only—the price of lead. It was perfectly true, that he did play on only one note, and it was fortunate for the shareholders that he had only one note to play upon, because everything else was so good and in such excellent condition, and everything was going so well and regularly, that the only note left was the price of lead; and he was sorry to say that would be his note on the present occasion. During the preceding six months the average price at which this company had sold lead was 14s. 17s. 6d. per ton, and during the last six months it had been very little above 14s. 2s. 6d. per ton; therefore, although they had paid dividends, they had been paid upon profits made, although the price of lead had been very low. That being so, he thought he might congratulate himself as a large shareholder, and also his brother shareholders, that they had kept the mine in such a splendid condition, and even, looking at the price of lead, to pay a dividend at all. (Hear, hear.) He had some little general remarks to make, and he hoped they would be in the six months ended June 30 last; since June 30 there had been a little movement upwards in the price of lead, and during the last fortnight the company had sold several parcels at 15s. 2s. 6d. per ton; if at the low price which had been ruling they could make a dividend, they ought to make a better dividend at 15s. 2s. 6d. But the directors hoped to see the price further improved, and if so he hoped they would revert back to the old payment of 2s. 6d. per annum on the 3s. share. (Cheers.) The directors had taken advantage of the frightfully depressed state of the lead market in doing what some of the directors thought they were wrong in doing, but he thought that when they heard all the circumstances they would be perfectly satisfied that the directors did the most judicious act they could do when they took advantage of the lowness of the lead market in making the purchase of a paying mine. (Cheers.) There was a mine called the Majada Honda, which was a going concern; it was a sort of joint-stock company under Spanish law, but the proprietors seem to have got to loggerheads, and the mine had almost ceased to work. In an imperfect way they had got out every atom of ore they could lay their hands on, and at last they came to such a position that they could go on no further, as they wanted fresh machinery to put the mine in proper order. They came to the decision that they would sell, and they put the property up to auction. The directors were given to understand that the price they would have to pay would be 4500l. The directors thought that if they could get hold of the mine, which only wanted 1500l. or 2000l. laid out upon it, if they could get hold of a good going concern, they would go on preparing for the rise in the price of lead, and providing for the price going up to something like a remunerative rate. The directors sent word to Mr. Tonkin that he was to buy the mine, and he did so, and bought it for less than 2500l., law expenses and everything included. That mine was now at work, and the company now had a very fine mine there. At the very time the Majada Honda stopped a former captain of the Linares, who had left to go and work at the other mine, and who had since come back to the Linares, wrote to Mr. Tonkin to say that at the time he was writing he was in a lode worth from 2 to 2½ tons per fathom. He believed the shareholders of the Linares would never regret having made the purchase. They could not rely upon the mine continuing always; therefore, they were now in the same position in the Linares as in the Fortuna—that was to say, they had another mine to fall back upon. (Cheers.) In conclusion, the Chairman moved the adoption of the report and accounts.—Mr. PARTINGTON seconded the motion, and he fully approved of the policy of the directors in purchasing the Majada Honda mine.

Mr. S. J. WILDE, whilst fully approving of the investment of a portion of the reserve fund in the purchase of the new property, said he always insisted upon the great desirability of a good cash reserve fund being built up again as soon as possible. The CHAIRMAN pointed out that the whole of the reserve fund had not been used, inasmuch as there was the smelting house at Cordova. It was a great investment, but of course could not be converted at once. The money had been provided from the surplus capital of the old Linares Company. There was between 7000l. and 8000l., and they could well afford to lay out 4000l. or 5000l. Mr. SWAFFIELD: The directors are endeavouring to pay for the mine out of

the floating capital, but they charge it to the reserve fund for the time being. The resolution for the adoption of the report and accounts was then put to meeting, and carried unanimously.

Mr. DONAGAN proposed a vote of thanks to the directors for their able conduct of the affairs during the past six months. Seeing the long period of depression in the price of lead, it was very satisfactory to the shareholders to see the dividend which had been declared, and they could only arrive at the conclusion that it was excellent management in London, and good work at the mine, which had brought about this satisfactory state of things.

Mr. RICHARD TAYLOR: I think I should, according to precedent, say a few words. It has generally been expected of the manager to make some comments upon the mine. The progress in the old mine has been very satisfactory, generally speaking, during the last year. There have been some very good points, and although there is nothing at present particularly rich we are opening up a good deal of ore ground in the western mine. There is a good course of ore in the 175 going from the San Francisco shaft, and there we have a considerable amount of unexplored ground. With regard to the acquisition of the new mine, I must tell you that I very strongly recommended that acquisition. I think, although the old mine has held out so very well, it is quite right we should provide more strings to our bow, looking to the future. (Hear, hear.) One of the mines which we purchased with that view some years ago has turned out, on the whole, very well, and during the past year has given us important help. The new mine of Majada Honda made good produce in past times, but during the last two or three years the Spanish company which worked it has been struggling to make head against the adverse circumstances of low prices. They had been taking out all the ore they could, and they have been erecting their machinery, which was not suitable for contending with the quantity of water they had, and altogether they were in a state of great difficulty. It was that which made it possible for us to purchase the mine, which I think we may fairly look to becoming one of very considerable value. (Hear, hear.) It is one in which the north lode has produced very large quantities of ore, but there are other lodes in the concession—two or three—which have been partly developed, and which promise remarkably well. Our business has been to correct the defect of their machinery for the drainage of the mine. Our agent has been actively engaged upon that, and I think I may say in a very short time we shall be completely masters of the water, and our machinery will I dare say deal with the water at about half the price it cost our Spanish predecessors. Therefore I may congratulate you upon having made a very valuable acquisition at a very cheap rate. (Cheers.)

Mr. S. J. WILDE: Is the mine generally looking as well now as at the date of the resolution for a vote of thanks to the directors was then put and carried, and the Chairman having acknowledged the compliment the meeting broke up.

#### FORTUNA MINING COMPANY.

The half-yearly general meeting of shareholders was held at the offices of the company, Queen-street Place, on Thursday, Mr. ROBERT HENTY in the chair.

Mr. HENRY SWAFFIELD (the secretary) read the notice calling the meeting. The report and accounts were taken as read.

The CHAIRMAN said during the past six months the company had gone on in the same quiet way as for some time previously. The price of lead had influenced the profits very considerably, but at the same time the board had conducted operations so as to secure a small profit even out of the low price which was got for the lead, at the same time avoiding damage to the mine by working upon the reserves, and so doing no mischief to their future prospects. Almost exactly the same quantity of ore had been returned, and almost exactly the same amount of reserve kept. He was happy to say there was the prospect of an improvement in the price of lead, and the last few sales had been at a somewhat higher figure. There were two or three very good points in the mine. The 130 had yielded 3 tons per fathom, and the Federico winze had also been yielding 3 tons; one was in the 130, and the other in the 120, therefore they might take it for granted that there was a considerable mass of ore between those two points, which, of course, was a very important item for the future. There was nothing more to be said about the old mine; but as there would be a resolution, to be submitted presently, with respect to the appropriation of the remainder of the reserve fund to the development of those mines, that would be the proper time to make some remarks upon those newly acquired mines. (Hear, hear.) He moved the adoption of the report and accounts.—Mr. DONAGAN seconded the motion, which was put and carried without any discussion.

The CHAIRMAN then moved that the directors be authorised to apply the remainder of the reserve fund, with the accrued interest thereon, to the further development of mining operations in the San Antonio, San Francisco, and El Tesoro Mines. Some time ago it was proposed by the directors to purchase these three mines, and that the reserve fund should be applied for the development of those mines. At present the San Antonio showed indications of great value, and it was the opinion of the directors, and also of the managers, that they had made a most fortunate investment of the reserve fund in the purchase of the mines. (Hear, hear.) The San Antonio Mine was yielding very nearly or quite enough to pay the costs, which, considering the time it had been in operation, was a most satisfactory position. (Hear, hear.) The second, the San Francisco, was in a less developed condition, and the El Tesoro was in a still less developed condition, but both promised to be of great value to the company in the future. The balance of the reserve fund was now between 700l. and 800l., and that money would be required for the further development of the mines; and therefore it was the wish of the managers and directors that it should be applied for that purpose, so that, as speedily as practicable, the mine might be brought into a condition to yield fruits, and materially enhance the profits and make dividends. Mr. ST. JOHN seconded the motion.

Mr. PARTINGTON asked what the directors would do in the event of the 700l. or 800l. not being sufficient to develop the mine?—The CHAIRMAN said the directors had not much doubt that it would be sufficient, and they did not see any probability of the company getting out of its debt and into debt. Besides, there was a considerable amount of the reserve fund not sold out.

Mr. S. J. WILDE thought the directors had done well in buying the new properties, but he did not like to see the whole of the reserve fund swallowed up. Mr. W. COX pointed out that it was not swallowed up; they were returning from the new mine 60 tons per month, and there were reserves of 800 tons; so that represented 6500l., which was really a reserve fund.

Mr. RICHARD TAYLOR: You cannot eat your cake and have it. I think the cake we have eaten will not disagree with us. (Hear, hear.) The few remarks I have to make are that the condition of the mines which we formerly possessed is altogether satisfactory. Both the Salidos and Canada Inco are continuing to open up good courses of ore, and we have still a very fine amount of reserves underground. So if we have not a large amount of reserves at surface we have them underground. In regard to the new mines, I may say I consider we are extremely fortunate in being able to turn to account the unhappy and depressed condition of the price of lead. It was the disastrous condition of the lead market which has enabled us to acquire these new mines, the San Antonio, the El Tesoro, the San Francisco, and the Clarin. The San Antonio has come into produce before the others, and, as Mr. Cox has just mentioned, it is giving us 60 tons of ore per month, and we have there reserves of 800 tons of ore underground, at very shallow levels, and very cheap to get away; and if we do fall short of money—I hope we are not going to fall short of money—but if at times it pinches a little we must raise more ore from San Antonio, which it is quite possible to do. This presents the opportunity of employing tributers, as well as the other mines which I have spoken of before now, and which I shall have something to say about when we come to the Alamillos meeting. The improvement in the price of lead, although not very great, will certainly afford a very strong stimulus to that class of operations. The exact figures—Mr. Swaffield will correct me if I am wrong—are that the sales in the half-year averaged 14s. 10s. per ton, and we have during this week made several sales at 15s. 2s. 6d. That is a substantial rise, the effect of which, I think, will be very apparent in our next half-year's accounts. (Hear, hear.) It is very encouraging to see the gradual rise in the price of lead; it has been very gradual, but it has grown quite what I have told you I hope I may encourage you to look forward to better results in the next half-year than in the past. (Cheers.)

The resolution was then put and carried. On the motion of Mr. S. J. WILDE, seconded by Mr. PARTINGTON, a vote of thanks was passed to the Chairman and directors, and the CHAIRMAN having acknowledged the compliment the meeting broke up.

#### ALAMILLOS MINING COMPANY.

The half-yearly general meeting of shareholders was held at the offices of the company, Queen-street Place, on Thursday, Mr. JOHN PHILLIPS JUDD in the chair.

The notice convening the meeting was read by Mr. HENRY SWAFFIELD (the secretary). The report and accounts were taken as read.

The CHAIRMAN said his was a very pleasant duty. He had nothing to say but that the property was in a very satisfactory state, even more so, or equally so, than it was when the accounts were made up to June 30. The result of the working had been very satisfactory, as they had made something like 900l. more profits than in the previous 6 months. They had raised about 180 tons more ore, and the reserves were in the same satisfactory condition, and he was happy to say that the directors had been able to pay a dividend of 1s. 3d. against 9d. in the preceding six months. (Hear, hear.) That arose from the mine being worked to a considerable extent on tribute, which merely meant "No song no supper"—that was to say, "no ore no pay." There were about 120 men employed on tribute, and the directors would continue that course of action as long as it was profitable and to the interests of all. The superintendent reported that the mines were in a most satisfactory condition in every respect, and the future prospects of the mine were most satisfactory, provided the price of lead kept up. (Hear, hear.) He moved the adoption of the report and accounts. He had nothing to do but to offer his congratulations to the shareholders on the satisfactory state of the property, which he hoped would continue.

In reply to Mr. Partington, Mr. COX explained that the smelting works had been erected at the cost of 3446l., and this had effected a saving of 1200l. a year to the company.

Mr. S. J. WILDE repeated the wish expressed at the meeting of the two other companies that the directors would build up a good reserve fund; for his own part he should be inclined to go with a somewhat less dividend, and see the reserve fund added to.

Mr. R. TAYLOR: If our constituency could be polled you would be

in a decided minority. Shareholders do like dividends. I have always been a very strong advocate for a reserve fund, but I have always been an advocate for strengthening the reserve fund, and building it up when we are in days of great prosperity; but when we have to look very closely at the means of making dividends for our shareholders, we are quite justified in letting the reserve fund stand aside for the time. (Cheers.)

Mr. PARTINGTON: Or even resorting to the reserve fund to pay a dividend?

Mr. R. TAYLOR: Yes, even resorting to the reserve fund, because in the Articles of Association it is generally provided that the reserve fund is applicable for regulating dividends. In this case we have not taken from the reserve fund to regulate the dividends, but we have contented ourselves with making as good a dividend as we could without drawing upon the reserve. (Hear, hear.) I think that would be the general feeling. I hope we shall build our reserve fund up again very rapidly and see better times. There is very little for me to remark upon. As the Chairman has said, the description given with the report is altogether satisfactory, and I will only say that I am quite sure you may rely upon it as being perfectly accurate, because our excellent agents there will never delude you in any degree in their reports of the mine. (Hear, hear.) Their reports of the mine you may take as perfectly accurate, and never err on the side of exaggeration. As regards the matter of the tributers' working, I stated I should have more to say respecting that when we came to this concern, because it forms a more important feature in the working of the Alamillos Company than any of the others. We have in the Alamillos a very great extent of old workings. It is a very large concession, and the various lodes have been worked upon to shallow depths most extensively. Now the system of working on tribute encourages the miners who are enterprising, and who have some means, of which there seem to be many in the locality. This system encourages them to search for those parts which have not been thoroughly explored, and there they set to work. In many instances they get nothing for months; it is a bold speculation on their part; relying upon their own judgment and skill as miners they work on. Certainly during the past year they had been very well rewarded for their perseverance and enterprise, having raised for us a large quantity of lead, which has contributed so much to our profits. I look upon it as an important feature in the Alamillos concern, that the extent of the old workings have offered so good an opportunity for working on tribute.

On the motion of the CHAIRMAN, seconded by Mr. PARTINGTON, the report and accounts were then adopted.

Mr. ST. JOHN, in moving the vote of thanks to the Chairman and directors, said that the fact of the board being large shareholders was a good guarantee to the shareholders that everything possible would be done to make dividends.—Mr. S. J. WILDE seconded the motion, which was put and carried, and the CHAIRMAN having acknowledged the compliment the meeting broke up.

#### KIMBERLEY NORTH BLOCK DIAMOND COMPANY.

An extraordinary general meeting of shareholders was held at the City Terminus Hotel, Cannon-street, on Wednesday, Admiral Sir WM. HEWITT, K.C.B., in the chair.

The minutes of the last meeting having been read and confirmed, the CHAIRMAN stated that the present meeting was called for the purpose of confirming the resolution passed on September 14 making certain alterations in the Articles of Association, in compliance with the requirements of the Committee of the Stock Exchange, the company having applied to that body for a settlement and official quotation in the shares. The resolution was duly seconded and confirmed.

The CHAIRMAN said that since the last meeting a very satisfactory letter had been received from the diamond fields, and as Mr. Little knew more about the diamond fields, and had had greater experience than himself, he would call upon that gentleman to read the letter to them.

Mr. LITTLE said that since they held their last meeting very satisfactory news had been received from the manager out there. As the shareholders were well aware, the great difficulty they had to contend with was the machinery question, and this, he was glad to say, was now completely overcome, a telegram dated Sept. 16 having been received from their manager to the effect that they were about fixing the hauling engine. They had also received a letter dated Sept. 5, from which he would read certain extracts. He (the manager) writes:—"I expect that the loose reef, estimated at about 4000 loads, will be hauled out in three or four weeks after the hauling gear is complete." As a month has elapsed since the date of that letter, and the hauling engine had according to the telegram been erected, they should be at work now on this very reef. "As to the hard reef at back it will certainly be troublesome for a year, but it will be worked down piecemeal gradually when necessary." We shall be in full working order in less than three months, washing about 300 loads per day, which most likely will yield 40s. per load. He thought that a return of 40s. per load was underrating the amount likely to be obtained, as he considered they might fairly look for a higher return than 40s. per load. The manager also writes that they would not be able to work all the year round. He (Mr. Little) would be much surprised if they could, though the manager does not mention any reason why. He thought they might fairly calculate on working six months in the year, and if so that would result in a very good profit to the shareholders. The company had purchased washing floors, wells, &c., and had also arranged with the Central Company with reference to a hauling pole, which would be a great convenience and facilitate work. Altogether the news received since the last meeting was of a highly satisfactory character. He presumed by this time the manager was in full work, and he only hoped that important results to the shareholders would be obtained.

The CHAIRMAN said that there appeared to be an impression that the company did not wish any representatives of the press to be present. That was not the case, the directors would be only too pleased to see the whole of them, and he hoped they would come to any future meetings.

Mr. LITTLE said that the directors would be happy to answer any questions that the shareholders might desire to put to them.

Mr. CHAS. STRANSKY said that he had no occasion to ask any questions, but he had been in the diamond fields in and about South Africa, and believed that they could not have a better man for their manager than Mr. Newberry, and when he estimated a return of 40s. a load he thought they might safely say that they would get 50s.

Mr. STRANSKY agreed with the last speaker, and observed that when Mr. NEWBERRY worked for his brothers they always had the same cautious reports as at the present time.

A vote of thanks to the Chairman and directors closed the proceedings.

#### UNITED VAN CONSOLS AND GLYN LEAD MINING AND BARYTES COMPANY.

The ordinary general meeting of the shareholders of this company was held at the mines, Llanidloes, on Friday, Sept. 30.

Mr. FRYCE JONES, Chairman, presided.

Amongst those present were Mr. J. A. Talbot, solicitor to the company, Mr. A. E. Francis, North and South Wales Bank, Mr. J. Cooper, secretary to the company, Mr. Clarke, London, Mr. Thomas Jones, Llanidloes, and Mr. J. K. Bayley, Liverpool.

The SECRETARY having read the notice calling the meeting, the following report was submitted:—

The directors present the half-yearly statement of accounts to May 31, which shows in the revenue account a debit balance of 1660l. 5s. 3d. This balance, as previous occasions, should be transferred to capital account. The necessary steps have been taken to reduce the nominal value of the 2s. shares to 1s. per share. The old scrip has been exchanged for new certificates, and all the ordinary shares are now of the same denomination. During the short period which has elapsed since the board was reconstituted (in March last), the directors have sold 160 tons of lead ore, and nearly 40 tons of barytes, and the present output from the mines is now approaching a total, the proceeds of which will nearly pay the monthly cost sheet, and that too at the present low price of lead ore (3s. 9s. per ton). It should be stated that while the amount of the debit of the revenue account for the six months ending May 31 was 1660l. 5s. 3d., the deficiency in that account will be under 500l. for the eight months ending Aug. 31.

The directors have made several appeals to the shareholders with reference to the issue of debentures, and although the result has been to them very disappointing, they have deemed it expedient to make an allotment of the amount applied for—5000l.—and are now prepared to receive applications for the balance unissued. In order to pay off the debts accrued whilst the last board held office a sum of 3000l. was advanced by some shareholders residing at Newtown, who took a charge on the mine and the whole of the assets of the company, which charge will be paid out of the proceeds of the issue of debentures before referred to, and the debenture-holders will have a first charge upon the whole of the company's property. The directors have given special attention to the economical working of the company's business, and they hope that the output will ere long be sufficient to pay the cost of working, and leave a surplus applicable to payment of the interest on the preference shares. They will continue to work your property as advantageously as lies in their power, and trust that they may be enabled to develop the mines in such a manner as will advance the property of the company.

Sept. 7.—We are making good progress in driving the 70, west of Murray's shaft; the drive contains more lime spar than usual, and is in all respects more congenial to lead. I fully expect a good course of ore when the level shall be extended under the ore discovered in the 60, if not before. In the 60, west of Murray's, we are cross-cutting the lode from the north wall towards the south. That portion driven through, although not rich, contains sufficient lead to pass through the dressing machinery. We have still about 7 fms. to reach the south part of the lode, which we expect will yield lead in greater quantities. We have cut down several fathoms of the north part of the lode, about 14 ft. in width, and shall now commence stopping the roof from the winze sunk from the 50, which will enable us to get lead from this point quicker than usual. The slope on the south part of the lode, opposite the last referred to, is yielding about 15 cwt. of lead per fathom; price for stopping, 40s. The slope east of the last named is producing from 10 to 15 cwt. of lead per fathom; price, 42s. per fathom. No. 1 slope above the 50 is in good order for working, at present yielding about 12 cwt. of lead per fathom. The ground contains more lead as we approach the shaft. No. 2 slope is precisely the same in quality as the previous one. The slope in the roof of the 40 scarcely contains lead in paying quantities. I have directed the men to drive east in the middle of the lode to meet No. 1 slope. The 50, west of Gundry's, is not yet clear of the mass of carbonate of lime. We have now a branch of flookan in the footwall, which indicates an early change in the matrix. If we find a bunch of lead here, as we have reason to expect, it will be a great acquisition to the property. The tributers are still working in the roof of the 40, and all other work, including dressing, &c., is carried on with energy.—JAMES ROACH.

The revenue account for the half year ending May 31 was as follows:—To ex-



Senditure—Labour, 1852l. 6s. 4d.; merchants' bills, 480l. 3s. 4d.; carriage, 27l. 5s. 1d.; printing and office rent, 112l. 10s.; office expenses, 23l. 2s. 6d.; printing and stationery, 31l. 18s. 6d.; travelling expenses, 41l. 5s.; royalty, 98l. 3s. 3d.; rent of mine, 10l.; trespass rent, 22l. 15s.; rates and taxes, 22l. 17s. 6d.; miscellaneous expenses, 8l. 10s. 11d.; interest and discount, 53l. 0s. 3d.; audit fee, 10l. 10s.; reports on mine, 4l. 15s.; law expenses, 17l. 9s. 5d.; total, 2889l. 0s. 1d. By income—Lead ore sold, 748l.; barytes sold, 39l. 12s. 10d.; old metal sold, 23l. 16s. 9d.; transfer fees, 3l. 5s. 3d.; ore in stock, estimated 414l.; balance, 1660l. 5s. 3d. A supplementary report was also read.

The CHAIRMAN moved that the reports be adopted.—Mr. BAYLEY seconded the motion. He said it was very difficult for anyone to grasp the exact position of the mine unless they were better versed in mining matters than he was, but he thought he could not do better than place his faith in Capt. Roach, who understood the technicalities of mining thoroughly, and who knew what should be done. There was one matter that was generally left in the hands of the directors which he was disposed to leave in the hands of the shareholders, and that was as to calling in the assistance of another captain whose opinion might possibly differ from Capt. Roach. If the shareholders were not satisfied with Capt. Roach's opinion the directors would be perfectly happy to carry out that idea, but he would like in the meantime to mention a few facts, and these would show them how the directors' efforts had been expended. The first fact was, that in the six months from September, 1880, to February, 1881, which was up to the time the present directors took office, a sum of 2804l. had been expended in labour cost-sheets. In the six months ending August the expense had been 2141l. 11s. 9d., which showed that during the period the present directors held office they had expended 662l. 17s. 3d. less than in the previous six months during which the late directors held office. Of course, in dwelling upon that they might say, "Well, that must be due to a large extent to there being a smaller output." But the facts were simply these—in the twenty months ending March 2, 1881, the output had been 290 tons, which averaged 15 tons per month; since the present management came into office (that was, from March 2 until that day) the output had been 185 tons, which showed an average of 28 tons per month. (Applause.) These facts spoke for themselves, and having mentioned them he had very great pleasure in seconding the adoption of the report. (Applause.)—The report was unanimously adopted.

The CHAIRMAN said it was his privilege, and certainly his pleasure, to meet the shareholders of the district in such large numbers; their attendance that day proved to him that the shareholders of Llanidloes were not unmindful of the interests of the locality. (Hear, hear.) Perhaps no other interests were so advantageous to them as the mining interest, and there was no trade or industry to the progress of which they might look forward to with so much hope as that industry and that trade upon which he had relied to such an extent—viz., the searching for the treasures that surrounded their splendid hills of which they might become possessed, and which might be a source of wealth to their town of companies, such as that of which they were members, were formed and well managed gentlemen who had no other object than to promote the mining industry of the district. (Hear, hear.) These gentlemen were prepared to lose their time and to open their purse-strings to develop the splendid resources which lay within their eyes, but they had come there to tell straightforward truths and to give them straightforward facts, and some of these gentlemen, too, had devoted great extraordinary energies to the interest of the mine. In doing so they had no other object in view than to promote the interests of the shareholders who had entrusted their affairs to them, and these gentlemen would not for a moment be apt to any report going forth which was not strictly accurate. These gentlemen had given the directors good advice, for which they and the shareholders should be thankful. The very best had been done for the interest of the mine, and the directors were present that morning to submit to any questioning the shareholders pleased from any gentleman who might appear there. He must apologise for one circumstance, and that was that they had not met the shareholders earlier; but the directors now presented them with a statement of accounts for the half-year ending March 31, as read by the secretary. They could, it was true, have called them together earlier, but he felt assured that all true friends of the company would admit they had wisely deferred the meeting until they could place their property outside all fear and danger. This had been done, and he thought it was only fair and right to explain how it had been done. One gentleman, a personal friend of his, had invested no less a sum in the adventure, than 1500l. Another gentleman had invested 600l., another 500l., and another 400l., while others had invested smaller sums, so that they had raised the entire amount of money they first thought proper to raise—5000l.; and they had the satisfaction of saying that they stood there with a credit balance at their bankers and sufficient to meet the demands of their shareholders. (Applause.) The prospects in future, so far as he had been able to learn, were excellent. (Applause.) He could assure them that he had got the very same confidence in their captain at that hour as he had upon a previous occasion when he had an opportunity of expressing that confidence which, he might say, was felt by the whole body of directors. (Hear, hear.) The directors were not opposed to the fullest investigation. They would welcome this investigation by the most competent man that could be found to undertake such operation; he was the greatest engineer or the greatest scientist that could be produced. They would welcome this investigation, and he might analyse all the work that had been done since the present directors took office. But if such an investigation were made it would cost money, and as the directors did not think it was necessary, and as they had the fullest confidence in their captain they were not disposed to go to needless expense. At the same time if any shareholders, not having the same confidence as the directors had in Capt. Roach, were desirous of a thorough investigation the directors would not place the least difficulty in their way, provided they were disposed to pay for it out of their own private means. If any gentleman had such a want of confidence, and he was desirous of having an investigation, let him pay for it out of his own private means, and not tell the directors they must pay for engaging an independent engineer and proving what they had done. Capt. Roach, in his report, had expressed that day the views of the directors, and they were quite satisfied with these views. They believed that Capt. Roach was a truthful man, and they were content with his assurance as to the future prospects of the mine. Capt. Roach told them that their prospects were more and more encouraging, and in fact that they were better now than they had been. He wished to direct their special attention to the fact that the prospects were better now than they had ever been, and he desired to emphasise these words as much as he possibly could. (Hear, hear.) He said again that the prospects of the mine were never so encouraging as they were at the present moment. The 70 west of Murray's shaft and the 50 west of Gundry's shaft might at any moment develop discoveries which would result in the mine being second to none in Wales. (Applause.) And here he desired to make one remark, and he thought it was due to the directors that they should say it after all they had gone through, and it was due also that they should do so for the knowledge, not only for the local shareholders present, but for the knowledge of those shareholders who were absent. What he desired to say was this, that not one shareholder who had written but what had done so in terms of encouragement. (Hear, hear.) In looking round him that morning he found only one shareholder from a distance present, and he presumed that this would show that what had been done by the directors was approved by the 600 absent shareholders. Possibly they might have some dissentients on that occasion, and who might desire to bring about a change, no doubt as they believed for the better, but if that was so the directors would only be too glad to reply to any questions that might be put to them. As stated in the report, and as had been said, they had been paid 10 tons of lead, and the proceeds amounted to nearly 1400l., and they had 25 tons in stock. The average price obtained for the ore had been about 8l. 10s. per ton. If the lead market had been at its normal price the sales referred to would not only have covered expenditure, but have left something towards a dividend. So they could see that the slightest improvement in the market, or what they might not only reasonably hope for but expect, a discovery of lead would place them in such a position as would make their directors the cleverest set of individuals connected with Welsh mining. (Applause and laughter.) When the present directors took office in March, in addition to the 3000l. which had been advanced, there were other debts outstanding to the extent of 1400l.—such as Messrs. Carvers, royalty, merchants' bills, &c., and the present board had discharged every shilling of these same royalties. (Hear, hear.) Besides that they had settled the claim of the National Provincial Bank, obtained the new loan, settled the bills rendered by the old solicitors, and were now free from liabilities to those gentlemen. (Applause.) But notwithstanding all those things the directors had done they had not escaped criticism, and for that reason he wanted the shareholders to take these facts home with them. They had, as he had said, not escaped many critics, and he had no doubts many of the shareholders who resided in this locality had seen a letter which appeared in a local paper, and to which he intended to reply in the following week; and the public would then have an opportunity of judging of the truth of the statements contained in this letter. In such a matter as this he was not going to be so egotistical as to say that the success attained would be due to him solely or to his friends in Newtown, who had done their best for the mine. He was not going to be so presumptuous as to tell them that they could turn the stone of which they raised too much, into lead, but would say this—the local directors, assisted by friends at Newtown and Llanidloes, had done their best for the mine and to bring about the present results. They did not mean to say that they could cause a freak of nature or a miracle, and convert this stone into lead, but the shareholders might rely upon it they would do their utmost to find lead wherever it existed in the mine. (Hear, hear.) There was also something else which should be stated. When the present directors took office in March, in addition to this 3000l. advanced by friends at Newtown, the other debts existing, amounting to 1400l., he can hardly confess, as a director, at that time he knew nothing about. These debts ought to have been paid off, as they were forward. (Hear, hear.) But now they had been paid off, but the present directors were forced into this position; they found they had to meet their claims in a hurry, as the creditors very quickly found the new directors out. If the directors had not taken up the position they did do what would have become of the shareholders' property? The directors did not take up that position because they desired it; they did it of necessity, but their vessel was left upon the wild ocean to drive to any place or any part, and probably to be broken into pieces. This was what the directors did over and when they took office, and they had to take upon themselves duties which were forced upon them from the position in which they found themselves. They had paid off their debts under difficulties, but they were paid, and at the present moment they did not owe a shilling but what they were able to pay. (Applause.) Indeed, they had done more than that. It was only since March they had done this, and this was a very short time in which to raise large sums of money, and especially when they had to dig into the bowels of the earth, and when they found the rock, as they all knew it was in that district, very hard indeed. But besides having paid their bills, which had been so long outstanding they had to deal with a claim for a large sum of money by the National Provincial Bank, and they had settled this claim, and they had secured the new loan, and all this had been done since March without any great flourish of trumpets, and at a time when things do not look so well. The present directors had endeavoured to the value of their property, and they had made a satisfactory arrangement about the lease, and there was now a new lease on the property, which could not be interfered with. This one circumstance alone should suffice to obtain credit for the directors. (Hear, hear.)

The SECRETARY: And all claims of the old company have been disposed of and the liquidation closed.

Mr. CLARKE said he was exceedingly glad to find that Mr. Bolton's letter had been the means of eliciting a good deal of information which the report did not give them. With regard to the report he was afraid it would on this occasion, as on many other occasions, keep the promise to the ear and break it to the heart. Captain Roach was very sanguine, and he had been so before, but the whole work done had apparently been in driving. There had been no sinking excepting in a winze. Beyond this there had been no sinking whatever. He thought they should have a report from an independent captain who was a fair and impartial man. He wished to remind them of one fact—Mr. Bayley speaking at a meeting some time ago, said that if they did not find lead in the 7 they would go to the 80, and if they did not find it in the 80 they would go to the 100, and he did not know how much deeper to find lead.—Mr. Bayley: Give us time.

Mr. CLARKE said that instead of doing as Mr. Bayley said they were going to do they seemed to have abandoned the policy of sinking, and to have gone to driving.

Mr. BAYLEY: I will answer your remarks presently. Mr. CLARKE said that Mr. Bayley had given some figures for an average of 20 months, but any one who took the trouble to go into matters knew that this was an unfair comparison. These 20 months were surrounded with all the disadvantages of disabilities which they knew attended the directors at the time, and it was very unfair to compare them with the six months previously to the present time, when they had got their machinery in order for everything to their hands. Mr. Bayley was not always very accurate.—Mr. BAYLEY: I beg your pardon; these are facts.—Mr. CLARKE: So-called.—Mr. BAYLEY: Well, they are facts.

Mr. CLARKE said that the Chairman had cast reflections upon the late directors which were quite unequalled, and especially so as Mr. Pryce Jones and Mr. Thomas Jones were members of the old board, and equally responsible for everything, just as the other directors were. Mr. Pryce Jones told them that a large amount of debt had been incurred of which he was ignorant. Well, Mr. Pryce Jones was a director, and if these debts had been incurred without his knowledge it was to his discredit. He (Mr. Clarke) said emphatically, that it was a pity the subject had been introduced, and he felt justified in saying this much in the absence of his colleagues. There were a few questions he desired to ask. What was the amount of the debenture capital allotted?—The SECRETARY: 5000l.—Mr. CLARKE: Is this part of the 10,000l.?—The SECRETARY: Must be so.—Mr. CLARKE: Part on the five year's term?—The SECRETARY: That is substantially answered.—The CHAIRMAN: There is nothing in it.

Mr. CLARKE said that discoveries have been made since the management went into its present hands?—Captain ROACH: All the lead has been discovered in the 50 and 60 fathom levels and in the winze we sunk. The ground just started greatly aids the output.

Mr. CLARKE said the report did not state things very clearly, and he would like to know how much out of the 150 tons of lead had been raised since the new board came in.

At this stage of the proceedings, some personalities were indulged in, after which, Captain ROACH, in answer to the question, said that all the lead had been raised by the present management.

Some questions were then put by Mr. CLARKE about the slime banks, but Captain ROACH said the puddles for washing the same would not pay for working, but the expense incurred in erecting them did not exceed 20l.

Other matters of minor importance were then discussed, and at the close of the meeting the CHAIRMAN said, in referring to certain personalities that he had not the slightest intention of wounding any one's feelings, and if he had done so he was sorry. What he had said had been prompted by his interest in the mine and the welfare of the shareholders.

The usual vote of thanks closed the proceedings.

#### NEW WEST CARADON MINE.

The ordinary general meeting of shareholders was held at the offices, Gracechurch Buildings, Gracechurch-street, on Thursday, Mr. ORLANDO WEBB presiding.

Mr. JOHN WATSON (the secretary) read the notice convening the meeting, and the minutes of the preceding meeting, which were confirmed. The accounts showed a balance of liabilities over assets amounting to 139l. 12s. 9d. The following report from the agent was read:—

I do not think it necessary for me to write a very lengthy report in order to show you the value of this piece of highly mineralised and, comparatively speaking, unworked ground, and the importance of proving the several lodes passing through the entire length of same, by cross-cutting, &c., as is now being done. I may remind you, however, that the length of this from east to west, or on the course of the lodes, is about 200 fms.; and from those lodes in the eastern part of West Caradon large quantities of rich copper ore were sold, leaving a profit to the shareholders of about 150,000l., and from certain indications presented themselves, I have been led to believe for some considerable time past that some of the lodes were missed, and the levels driven on branches split off from the main part of the lodes; consequently, these branches became poor, as might be expected, the driving discontinued, and the whole of the western ground abandoned without having a fair trial. This was found to be so in the case of Menadue lode some years ago, and since the present company started those mines. We have proved this to be the case with Vivian's and the main lodes, and I think it highly probable that it will be found to be the same on some, at least, of the other lodes also. The cross-cut we are now putting out at the 38 or 70 fms. levels from surface, together with the opening out on branches at various points, will prove all this. Since the last general meeting the cross-cut above referred to has been holed to the winze sunk below the 27, which has not only given us good ventilation but a proper passage or shoot for bringing away all the ore and attle that may be broken above this level. The driving of this cross-cut should be urged on with all possible dispatch, as it is of paramount importance, both to this and West Caradon, not being in places many fathoms from the boundary, and running almost parallel with it, so that a good discovery in one would be almost of equal importance to the other; and from the appearance of the ground, and the veins we have been intersecting, we are almost daily expecting to make some discovery. The lode in the 42, west of cross-cut, has made a squeeze now, yielding  $\frac{1}{2}$  ton of copper ore per fathom. This lode in the level east of cross-cut will yield 1 ton of ore per fathom. This level is not yet driven far enough to reach the shoot of ore we are working on the rise above the back of same, which is looking exceedingly well. The two stopes, one east and the other west of rise, will yield in the aggregate from  $\frac{1}{2}$  to 5 tons of ore per fathom, a very pretty looking lode. You will see from the above that the points in operation are turning out a fair quantity of good quality ore, and I can confidently let the mine speak for itself.—N. RICHARDS.

The CHAIRMAN thought the shareholders would agree that the report was a very satisfactory one, especially in reference to the recently discovered lode, the prospects concerning which were so encouraging.

Capt. N. RICHARDS said he had put the rise up to prove the lode, which they had done in a much shorter time than if they had gone on as they previously did. Mr. HODGKINSON asked if they could stop on each side of the rise?—Captain RICHARDS replied that they could. They were, in fact, doing so now, and that was the reason why the number of men had been increased. Another branch of one lode I can confidently let the mine speak for itself.

Mr. HODGKINSON asked how many fathoms they could drive in the 38 cross-cut in six months?—Capt. RICHARDS said they were now driving about 3 fathoms a month, but the distance driven must depend very much on the nature of the ground. He (Capt. Richards), in reply to a further question, said they would sell at least 70 or 80 tons of ore at the next account. They had about 25 tons of ore dressed at the present time. He believed that if such a lode as that which had recently been intersected had been discovered in South Caradon the shares in that mine would have gone up 50l. in a day.

The CHAIRMAN proposed that the secretary and the agent's report should be passed and allowed. Mr. GUTTERER seconded the proposition, which was adopted; and on the motion of the CHAIRMAN, seconded by a SHAREHOLDER, a call of 9d. per share was made, payable on or before Oct. 23, with a discount of 5 per cent. on amounts paid before that date.

The lease of the sett granted to Mr. John Watson, with a royalty of 1-18th, and without any dead rent, was produced, and the usual resolution indemnifying the grantee was passed.

A vote of thanks having been passed to Mr. Orlando Webb for presiding the meeting terminated.

#### WEST CARADON MINE.

The ordinary general meeting of shareholders was held at the offices, Gracechurch Buildings, Gracechurch-street, on Thursday, Mr. ORLANDO WEBB in the chair.

Mr. JOHN WATSON (the secretary) read the notice convening the meeting and the minutes of the preceding meeting, which were confirmed. The balance-sheet showed a cash balance in hand of 46l. 0s. 7d., and a balance of assets over liabilities of 164l. 2s. 10d.

The SECRETARY asked what the labour costs would be in future?

Capt. N. RICHARDS replied that they would probably be about 160l. or 170l. per month for the present. The next month's account would be a little heavy in consequence of the carriage of ore.

The SECRETARY then read the following report from the agent dated the 4th inst.:—

In handing you my report for the general meeting to be held on the 6th inst. I beg to say Gilpin's lode in the 38, west of main cross-course, has a more promising appearance, and the stratum much more congenial for the production of copper ore than when we commenced operations at this level, the lode and ground at the point of starting being much split up and disordered by coming in contact with Kellow's lode, and I have every reason to believe it will continue to improve as we get away from the influence of same, and the shoots of ore reached coming down from the levels above. We find from the dialing we have about 7 fms. further to drive to reach the winze we have sunk from the 27 to the 38, the lode in which is over 2 ft. wide, and at times produced good deposits of rich copper ore; and may again remark that in the adjoining sett, Craddock Moor, and but a short distance driven for 50 fms. from the opening of this part of the sett will be watched with much interest. Vivian's lode in the back of the 50 will yield about  $\frac{1}{2}$  ton of copper ore per fathom, but little has been done by way of proving the lode in the bottom of this level, which has been quite full of attle; this we have now cleared, and blasted some holes in the bottom, and find a lode going down about 18 in. wide, of a very promising

character, and will yield fully 1 ton of ore per fathom. We cannot, however, work this at present, or while the men are stopping the back; but this also is deserving attention, and should be proved as early as possible. This lode in the bottom of the 38 will yield  $\frac{1}{2}$  ton of ore per fathom. The rise in the back of this level, west of ditto, will yield 1 ton of ore per fathom. This lode in the slope east of cross-cut will yield 2 tons of ore per fathom. Some weeks since we placed a pair of men to rise on a branch in the back of the adit level on this lode, which has since much improved, and will now yield fully 1 ton of ore per fathom. There are a great number of other points presenting indications of great promise, and I again repeat there are thousands of fathoms of unexplored ground in this sett, and I have every reason to believe that, when properly developed, mineral will be found in paying quantities, and the shareholders rewarded for their outlay and perseverance.—N. RICHARDS.

The CHAIRMAN said the report appeared to be of a very satisfactory character. Capt. Richards was certainly not a sanguine man, and did not raise their hopes without a good foundation.—Mr. RISLEY considered the report the best that had ever been presented to the shareholders.—Mr. HODGKINSON enquired how many men were employed on the mine?—The SECRETARY, in reply, said there were 33 men and 16 boys and girls.

Mr. RISLEY remarked that all the great discoveries in the district had been made by tributers, and thought it would be well to put a few tributers on for a few months.—Capt. RICHARDS said he would be very happy to put on some tributers if that were the wish of the shareholders generally; and, after a short conversation, it was decided that this should be done.

The CHAIRMAN, in answer to a question, said that there had been a great deal of unproductive work done; but last month the total costs, including merchants' bills, was only 177l. 15s. 4d.

Mr. HODGKINSON asked whether the costs were likely to run down or to keep at about that level?—Capt. RICHARDS thought they would remain about the same rate. At all events, they would not amount to 200l. a month for the next four months.

Mr. HODGKINSON asked if 20 tons of ore per month would be produced in the next four months?—Capt. RICHARDS would not promise that that amount should be returned, though they might get more.

The CHAIRMAN moved that the accounts and the agent's report should be received and passed.—Mr. GUTTERER seconded the motion, which was carried unanimously.

On the motion of the CHAIRMAN, seconded by Mr. HODGKINSON, a call of 1s. per share was made, payable on the 20th inst., with a discount of 5 per cent. on the amounts paid before that date.

Capt. RICHARDS said there was one important feature to be noticed, and that was the recently discovered lode in New West Caradon, where one point was worth  $\frac{1}{2}$  ton of ore per fathom. This lode had been discovered about 25 fms. from the West Caradon Mine, and was running in that direction. He believed that this was the main lode which was missed by the old workers in West Caradon, and which would doubtless be found by them. New West Caradon would have to drive on the lode about 25 fms., and then the end would have to be taken up by West Caradon.

It was decided, after a short conversation, that the level should be driven in the direction of West Caradon as rapidly as possible.—The meeting then closed.

#### THE BRITISH SILVER-LEAD MINES.

The statutory meeting of shareholders was held at the Clarendon Hotel, South John-street, Liverpool, on Saturday, Sept. 24, at which Mr. J. F. METCALFE, the Chairman, presided.

The notice calling the meeting having been read, Mr. JOHN L. M. FRASER, managing director, read Mr. Walter Eddy's reports as follows:—

From, June 30.—I made a careful examination of these mines on the 22nd inst. They are situated about three miles from Blaenau, Festiniog. The mineral set is large, being nearly a mile long on the run of the lodes. A part of the property is held on lease from Lord Newborough for a term of 21 years from April 1, 1879, at a dead or minimum rent of 10l. per annum, merging into a royalty of 1-15th on all ore sold; and the remainder of the property is held on "back note" from the executors of the late W. W. E. Wynne, Esq., for three years from Oct. 2, 1880, at a dead rent of 5l. a year, merging in a royalty of 1-15th on all ore sold, with powers for a lease for 21 years, on the same terms, at the expiration of the back note. I consider these rents and royalties exceptionally favourable to the lessees. There are several mineral veins traversing the property in nearly an east and west direction, some of which will form a junction on the western side, and also in depth, and at such junctions there are great prospects of large deposits of ore being discovered. I shall, however, confine my remarks to what I consider is the main lode, and on which the principal workings have been made. This is a strong powerful lode from 3 to 4 ft. wide, and made up of quartz, blende, and rich lead ore. The deeper workings hitherto made are not more than 10 yards from surface, but other openings and pits from surface have been made upon it for several hundred yards in length, proving its continuity and quality. All along these explorations the lode is a strong, powerful one, highly mineralised throughout, and maintaining its width and character. The lead ore is rich in silver, producing about 14 ozs. to the ton of lead, and the blende is of a very superior quality.

In my opinion the resources of the Company should, at present, be employed in further opening out the mine in depth and length; and as the adit level has already cut the north and south lode, it should be continued further south to intersect the main one, when the latter should be driven upon west, to prove it to a depth of 40 fathoms from surface. The nearest resemblance to the strata and lodes here, that have come under my observation, is to be seen at the rich Tan-y-Bwlch, and the Aasheton mines, a few miles south of Pwllheli, to which both the strata and veins here, bear a striking analogy at the surface. A public tramway runs through this sett, and communicates with the Festiniog and Portmadoc narrow gauge, and the London and North Western Railway, from Blaenau, to Bettws-y-coed, so that the mines are well situated for getting their ore to the surface, and for the carriage away of the ore. In conclusion, I consider these mines a fair and legitimate undertaking, and well deserving an energetic and thorough development, presenting as they do the most promising appearances of any lead mining adventure in the district.—WALTER EDDY, Mineral Surveyor.

On the motion of the CHAIRMAN, seconded by Mr. J. C. MARROW, it was unanimously resolved that these minutes and Mr. Eddy's report be printed and sent to the shareholders.—On the motion of Mr. DAVID ROBERTS, seconded by Mr. JOHN GARSIDE, it was unanimously resolved that Mr. J. F. Metcalfe, Mr. J. C. Marrow, and Mr. Angus L. Fraser, the retiring directors, be re-elected directors of the company without remuneration.—On the motion of Mr. W. A. FRASER, seconded by Mr. DAVID ROBERTS, it was unanimously resolved that Mr. James Dickson be elected auditor, and that his remuneration be 5l. 5s. for next year.—On the motion of Mr. JOHN GARSIDE, seconded by Mr. SAMUEL ROBERTS, it was unanimously resolved that the unallotted shares be issued in such manner as the directors deem necessary.—On the motion of Mr. SAMUEL ROBERTS, seconded by Mr. J. C. MARROW, it was unanimously resolved that a cordial vote of thanks be given to the managing director for his attention to the interest of the shareholders, and for his services as secretary without remuneration.—On the motion of Mr. JOHN GARSIDE, seconded by Mr. DAVID ROBERTS, it was unanimously resolved that the cordial thanks of the shareholders be given to the directors, and of this meeting in particular to Mr. J. F. Metcalfe, for his conduct this day in the chair.

#### STARTING OF CAMBORNE VEAN MINE.

A meeting was held at Rogers's Commercial Hotel, Camborne, on Monday (Mr. THOMAS PRYOR presiding), for the purpose of starting Camborne Vean Mine.—The CHAIRMAN explained that the mine was to be worked on the Cost-book System in 6000 shares. The position of the mine was so near one of the richest mines in the world (Dolcoath) that he thought as soon as the shares were allotted any gentleman wishing to dispose of his shares would not be long before he did so at a good premium. (Hear, hear.) The mine was to be worked under the usual Cost-book rules, and the trustees of the property, under a lease for 21 years, were Messrs. W. H. Rule, N. Clymo, and D. Stephens.

Mr. H. Rule said they had a splendid lode in the 35 fm. level, and the stuff that came from it was so rich that it really surprised him when he saw it pulled to surface.

Mr. Richard S. Teague was appointed purser of the mine at a salary of six guineas per month, and Messrs. W. H. Rule, F. Harvey, Lowry, T. Pryor, and the purser, were appointed a committee to select a manager. Capt. N. Clymo was appointed resident agent at a salary of eight guineas per month; Mr. F. W. Michell was appointed engineer, and Messrs. Williams, Williams, and Co., of the Miners' Bank, were appointed bankers.

The CHAIRMAN said it had been thought advisable that they should make a call of 7s. 6d. per share, which would realise 2250l. That could be sufficient to pay off everything up to Saturday next, and allow them to go on, probably for six months, without making another call. Their water charges would be very light, as they were drained by a very rich neighbour. He then stated that he did not know what Mr. Rule's ideas were with regard to the purchase-money for the sett, but the following proposition on the matter had been drawn up:—"That the sum of—be paid to the promoters of the mine for their time and expense in obtaining the sett and bringing out the company, this sum to include payment for the engine and for plant and materials on the mine, including all costs of working the mine for the last twelve months, and all costs to Saturday next." Mr. Rule would, therefore, pay all costs incurred up to the 8th inst., so that the call, minus the sum that would be voted to Mr. Rule, would remain intact, to be devoted to the working of the mine.

Mr. RULE said they knew that for 12 months he had been trying to bring out a company for working that mine. He went to London and got the assistance of Messrs. Watson, Gundry and Seward, but they wanted to bring out the mine as a Limited Liability Company, which meant that the promoters would have pocketed 50,000l. and 50,000l. would be put to work the mine. (Laughter.) He did not believe in that. He meant to work the mine by himself in the first place, but he had two partners (Messrs. Phillips and Reed). In the course of a year or two his friends got frightened and retired, taking 100l. each as their share in the concern. But he resolved to go on. He had some little idea as to what amount he was out of pocket, but he did not want any promotion money. He would leave it to the shareholders as to the amount they would give him. He then gave an inventory of the machinery and plant on the mine, and stated that if he had assisted in starting the concern on the Limited Liability principle he could have put thousands of pounds in his pocket. (Laughter and applause.) But he was satisfied that Camborne Vean Mine, which was drained to a depth of 180 fms. from surface by Dolcoath, was at the present moment worth 30,000l. in the market, and should they meet with an improvement the shares would be worth 5l. each before long.—Mr. Rule then retired from the room.

Mr. R. S. TEAGUE, who had gone over the mine, said he did not think they could give Mr. Rule less than 1500l. to recoup him for his outlay in the mine.

After a short discussion it was resolved, on the motion of Mr. EDDY, seconded by Capt. EDDY, that Mr. Rule be given 1500l. for his share in the mine.

Mr. RULE then came into the room and thanked the shareholders for the sum they had voted him. The property they had bought for 1600l. was at the present moment worth 30,000l. They had no less than four lodes in the mine upon which they could at once commence operations, and he predicted that the call they had made that day would be the last call made in Camborne Vean.



## THE COAL TRADE.

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coals into and from the port and district of London, by sea, railway, and canal, during September, 1881:—

Imports.			Exports.		
By Sea.	Ships.	Tons.	By Sea.	Ships.	Tons.
Newcastle	153	152,922	London & North-Western	143	578
Sunderland	102	81,352	Great Northern	95	586
Swansea	30	15,796	Great Western	84	493
Hartlepool	51	22,858	Midland	209	638
Middlesbrough	3	3,030	Great Eastern	70	705
Scotch	10	6,227	South-Western	6	107
Welsh	27	21,097	South-Eastern	1	79
Yorkshire	14	2,455	Grand Junction Canal	358	10
Small coal	11	6,280			
Cinders	4	578			
Total	421	312,572	Total	612	114
Imports—Sept., 1880	373	264,159	Imports—Sept., 1880	469	290

Comparative Statement, 1880 and 1881.			Exports.		
By Sea.	Ships.	Tons.	By Sea.	Ships.	Tons.
Jan. 1 to Sept. 30, 1881	373	270,372	Jan. 1 to Sept. 30, 1881	481	711
Jan. 1 to Sept. 30, 1880	379	258,937	Jan. 1 to Sept. 30, 1880	439	508
Increase—1881	—	116,335	Increase—1881	—	421,903
Decrease—1881	51	—			

Exports.			General Statement, 1880 and 1881.		
Railway-borne coal passing "in transitu" through district	Tons	112,943	Sea-borne coal exported to British Possessions, or to foreign parts, or to the coast	Tons	59,847
Ditto sent beyond limits by railway		15,898	Ditto by canal and inland navigation		1,570
Railway-borne coal exported to British Possessions, or to foreign parts, or to the coast		43,264	Ditto by canal and inland navigation		235
Total quantity of coal conveyed beyond limits of coal duty district during September, 1881		233,755	Ditto, during September, 1880		189,505

Comparative Statement, 1880 and 1881.			General Statement, 1880 and 1881.		
Total distribution of coal from Jan. 1 to Sept. 30, 1881	Tons	1,976,926	Total distribution of coal from Jan. 1 to Sept. 30, 1880	Tons	1,743,708
Increase in the present year		233,218			

General Statement, 1880 and 1881.			THE TIN TRADE.		
Increase in coals imported by railway	Tons	421,263	Messrs. STRAUSS and Co. (London, Sept. 30) issue the following statistics of Tin:—		
Increase in coals imported by sea	Tons	116,355	Straits and Australian, spot, 1881	Tons	1880
Deduct increase in coals exported	Tons	233,218	Sept. 30, 1881	1880	1879
Total increase in trade within the London district—1881	Tons	304,320	Straits, afloat	138	449

THE TIN TRADE.			CORNISH MINE SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Cornish Mine Share Markets.		
Straits, afloat	138	449	Mr. S. J. DAVEY, mine shareholder, Redruth (Oct. 6), writes:—Our market was strong in the beginning of the week, and prices generally firm, but the decline in tin brought out sellers, and prices gave way. Dolcoath, South Franches, West Franches, Carn Brea, and East Pool, are the mines most dealt in. Dolcoaths have fallen 2 on the week, Tincrofts 1/2, and West Franches 1/2; but East Pools have risen 2, and South Franches 1/2. Smelters raised the tin standards 2s. per cwt. on Friday. T-day market is inactive. Prices are as follows:—Blue Hills, 2 1/2 to 3; Carn Brea, 2 1/2 to 2 3/4; Cook's Kitchen, 2 1/2 to 2 3/4; Dolcoath, 2 1/2 to 2 3/4; East Pool, 4 1/2 to 4 3/4; Killfirth, 3 1/2 to 3 3/4; Mellanear, 4 1/2 to 4 3/4; New Cook's Kitchen, 5 to 5 1/4; New Killy, 2 to 2 1/4; North Buss, 2 1/2 to 2 3/4; Penrhall, 1 1/2 to 1 3/4; Phenix, 3 1/2 to 4; Pedn-ar-dra, 4 1/2 to 4 3/4; South Crofty, 10 to 10 1/2; South Crofts, 11 1/2 to 12; South Franches, 16 to 16 1/2; Tincroft, 20 to 20 1/2; West Basset, 14 1/2 to 15; West Franches, 19 to 19 1/2; West Killy, 9 1/2 to 9 3/4; West Pezvor, 14 1/2 to 15; West Polidice, 6 1/2 to 7 1/2; West Tolgus, 12 to 14; West Seton, 16 to 18; Wheel Agor, 14 1/2 to 15; Wheel Basset, 5 1/2 to 6 1/2; Wheel Comfort, 2 to 2 1/2; Wheel Grenville, 11 1/2 to 11 3/4; Wheel Jane, 14s. to 15s.; Wheel Pezvor, 15 1/2 to 15 3/4; Wheel Killy (St. Agnes), 1 1/2 to 1 3/4; Wheel Prussia, 1 1/2 to 1 3/4; Wheel Uny, 3 1/2 to 3 3/4; West Polbrean, 1 1/2 to 1 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Mr. J. GRANT MACLEAN, sharebroker and ironbroker (Oct. 6), writes:—During the past week the market has been quiet, but prices keep firm, owing to the improving prices of metals and minerals. The upward movement of the Bank of England's rate of discount to 5 per cent. has not had much effect, owing to the favourable prospects of trade; shares, therefore, are generally inclined to improve.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

THE TIN TRADE.			SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.		
Straits and Australian, spot, 1881	Tons	1880	Stirling.		
Straits, afloat	138	449	Shares of coal, iron, and steel companies prices are generally higher, owing to the rise in the prices of coal and iron. On the week Nant-y-glo and Blaenau (preferred) have advanced 1/2 per share, Ebbw Vale 17s. 6d., Omoa and Cleland 3s. 6d., and Marbella 1s. 6d. On the other hand Shotts Iron have declined 1/2 per share, Steel Company of Scotland 2s. 6d., also Benhar and Clyde Coal each 6d. In the Scotch pig-iron market the price of warrants has advanced from 51s. to 53s. 7 1/2d. In Scotland 14 furnaces less are now in blast than last week, and in Cleveland the reduction has also been carried out. The shipbuilding trade reports are good, while the demand from America and other foreign parts is increasing and makers are advancing prices all round. Benhar Coal, 13s. to 14s. 6d.; Bolckow, Vaughan, 28 1/2; Chatterley Iron, 7 1/2 to 8 1/4; Chillington Iron, 6s. to 7s.; Cardiff and Swansea Coal, 40s.; Clyde Coal, 58s. to 60s.; Cairnval Gas Coal, 7 1/2; Ebbw Vale, 10 1/2 to 10 3/4; John Bagnall and Son, 5s.; Llanelli and Tondy, pref., 7s. 6d. to 7s. 10d.; Lochore and Capleford, pref., 10 to 11; Marbella Iron, 7 1/2 to 7 3/4; Mynydd Iron, 25s. to 30s.; Nant-y-glo and Blaenau, 35s. to 37 1/2; New Sherriff Colliery, pref., 4 1/2 to 5; Omoa and Cleland, 32s. (see 34s.); Shotts Iron, 45s. and Steel Company of Scotland, 9 1/2 to 9 3/4.		

ons, as variously reported. Since our last issue we have to record a further advance in the price of Chili bars, and a good business has been done at from 61*l.* 10*s.* up to 62*l.* 5*s.* for spot, and from 61*l.* 10*s.* up to 63*l.* for forward and arriv-



brokers, Princes-street (Oct. 6), write:—The fears of dearer money—which were realised to-day—have tended to keep down prices of stocks. The fall in no case, however, in home railways has been heavy during the week. North British Railway stock has receded from 85½ to 84½, Glasgow and South-Western from 115½ to 115, Great North of Scotland is down ½. Highland remains at 107. Canadians and Americans have been very weak. Clydesdale Bank has risen from 222 to 223, Royal from 208 to 210, and Union from 225 to 227. Northern Assurance have receded from 55½ to 55, Scottish American Mortgage shares have risen 6d., to 67½, and Scottish Trust of Ceylon 1s. 3d., to 37½. 6d. In mines Canadian Copper at one time receded from 32s. to 30s., but the fall has been nearly recovered. Omoa and Cleland Iron rose from 28s. to 33s., but the top price has not been maintained. Scottish Pacific Coast have receded from 9 to 8½, Shotts Iron from 50 to 45, Tharsis from 43½ to 43¼. Uphall Oil have receded from 9 to 8½.

#### IRISH MINING AND MISCELLANEOUS COMPANIES' SHARE MARKET.

DUBLIN, OCT. 6.—In mines, Mining Company of Ireland shares continue to improve, and at 2½ are 5s. higher, and up 11s. 3d. as compared with last week's price. Wicklow Coppers have been fairly firm, rising 6d., to 13s., but have been very variable, fluctuating between 9s. 6d. and the top price here maintained, which is the highest marked, and compares with 14s. the previous week. Rails have been quiet, but the tendency has been decidedly upwards, excepting the case of Midland Great Western, which has been rather flat, and has fallen 12s. 6d. Belfast and County Down are up 2s., and had been 10s. higher. Belfast and Northern Counties, and Dublin and Wicklow, are each 40s. better, and Great Southern at cash price shows an improvement of 5s. Great Northern has been sensitive, and after having advanced 10s., to 110, dropped 15s., but has since recovered to the previous week's price. Waterford and Limerick have been steady, at a decline of 2s. 6d.

CORK.—Messrs. J. H. CARROLL and SONS, stock and share brokers, South Mall (Oct. 6), write:—Markets were rather dull to-day, and Great Southern were done at 109½. Midlands also changed hands at 80½, and Passages at 9½. National Banks were done at 70, and Munsters at 75-16ths. Hibernias also done at 4½. No change in Provincials. Cork Steam Packets remain 11½ to 11½, and Gouldings 8½ to 9. Lyons are about 4½, and gas shares 6½ to 6½. Levy's remain sellers at 5½, and Harbour Board Debentures buyers at 102½.

#### GOLD MINING IN MYSORE.

INAUGURATION BY THE MAHARAJAH OF QUARTZ-CRUSHING AT KOLAR.

Bangalore is not a nice place—to leave; and the casual visitor from Madras, who chances to be acquainted with the crack stations of India, will usually carry away with him the conviction that Bangalore may justly claim to be the most attractive of those places in the gorgeous East wherein military men love to congregate. Even apart from its warriors, Bangalore is delightful at this autumnal time of year, for it has an air of prosperity about it which finds expression not only in large bungalows standing in small parks, but also in admirable roads, with fine trees arching picturesquely over them. The air in the morning and evening is just a delightful mean, and even at mid-day the temperature is almost balmy as compared with that of Madras in September. We are bound for the Land of Great Expectations, better known at present as Kolar. The special train is drawn up beside the scarlet carpeted platform, and General Beresford has handed the youthful Maharajah into his saloon carriage. The party includes the Maharajah and his Highness' brother; Mr. Rungacharlu, the Dewan; Mr. Sandford, the British Resident of Mysore; General Payne, C.B., the Provincial Commander-in-Chief; General Crosse Stewart, C.B., commanding the Madras District; General Prendergast, C.B., V.C., commanding the Malabar Brigade, and many others. At Kolar Road station the platform was as crowded as Charing Cross terminus on a Bank Holiday.

His Highness entered the carriage that was awaiting him, and was accompanied by General Beresford. The station compound was full of people; and his highness started with the escort of Silladar Horse, followed by wagonettes with the other guests.

The crowds of people at Kolar formed not the least noticeable feature of the day. The new industry is now attracting population from out-lying localities, and it seems probable that the local supply of labour is more likely to overtake than to fall short of the demand. News that his Highness has lent his countenance to the enterprise of those Sabhis who are so busy making pits, erecting machinery, and creating towns, is likely to be widely spread by the proceedings of Saturday. Whatever may be the result to those who have invested their money in testing the field, it must be allowed that at the present time the industry is a godsend to the district. One company already employs 400 coolies, and when all its machinery is up and working, it will probably need the services of a thousand men and women. A dozen or more other companies, when their works are equally forward, may offer employment to a similar number, and it is possible that within a year from this time there may be several thousands of the Maharajah's subjects constantly employed upon the Kolar concession.

It is a drive of about a mile to the block belonging to the Nundydroog Company, and the Maharajah's arrival was announced by the discharge of dynamite detonators.

About half a mile from the Nundydroog camp is the camp of the Old Ooregum Company, and his Highness walked across, his movements being attentively watched by the dense yet silent crowd of natives. The works in the Ooregum camp, the oldest on the ground, are not perhaps as well advanced as they would have been had there not been some occasion to make new departures, which have involved loss of time. About a mile from the Ooregum is the Mysore Company's block. On reaching the latter the Maharajah was received by Captain Rogers, and was conducted at once to the elephant stamp, which has just been erected near the main shaft. This stamp is provided with two arms that batter batter upon the quartz with which it is fed. The quartz is previously broken into small pieces by a powerful stone-breaker 6 ft. in the rear of the stamp, is shovelled into a hole behind the two arms, and glides down an inclined plane to the box, into which the arms fall. Mercury is employed to catch the gold particles. The largest amount of crushing will be done by a 30-head Californian gravitation stamp, of which the engines, boilers, and chief parts have been erected.

All the machinery is on the ground; and thanks to the proximity to the railway, was got up from Madras without serious difficulty, and with very little damage. Timber is obtained from Bangalore or Beypore; and fuel is abundant, and likely to continue so, for the recent opening of the railway to Mysore, brings a large area of well timbered ground within easy reach of Kolar. The fear that water will prove the standing difficulty in the Kolar gold fields, does not apply to the Mysore Company's land, if indeed it applies to any part of the field. One thousand tons of payable quartz are now on the surface awaiting crushing; and with the ground already opened, a supply of 60 tons a day can be brought up without difficulty. The stone is devoid of pyrites; and gold is rarely visible in it; but the precious metal is said to be well diffused. The company has already sunk twelve shafts, varying in depth from 55 to 73 ft.; and has opened out five galleries of from 12 to 80 ft. in length. These galleries are still opening in the lodes, which average 7 ft. in width. Thus four well defined reefs on the property are being worked, including what is known as the Champion reef, which is traceable from end to end of the claim, or a distance of two miles.

The properties of the several companies extend a distance of a little more than 8 miles, north to south. The most northern is the claim of the Nine Reefs Company, 320 acres; with the Balaghat Company, 149 acres. Due east of this are the Nundydroog Company, 257 acres; and Ooregum Company, 257 acres; while to the west, stretching in a long strip, north and south, is the Kaiser-i-Hind Company. Between the southernmost moiety of the Kaiser-i-Hind and the Mysore Company, is a large block, not yet occupied. Adjoining the southern boundary of the Mysore, is the Colar Company, 320 acres; then an unoccupied block of 160 acres; then the Great Southern Mysore Company, 160 acres; then, still continuing south, the Mysore Reefs Company, 320 acres; and lastly, the Madras Company, 320 acres.

—From Madras Mail, Sept. 5.

#### FOREIGN MINING AND METALLURGY.

Although no further advance in prices is reported in the Belgian iron trade quotations show a marked general firmness. The situation is excellent, upon the whole; upon this point there cannot be any doubt. Work is plentiful not only in almost all the mechanical construction establishments but also in all the forges. Some few of the construction establishments have their production engaged until the close of the current year, and even far into 1882. The production of Luxembourg pig is engaged until the close of 1881. Prices have accordingly advanced to 2l. per ton, which is equivalent to 2l. 4s. to 2l. 4s. 10d. per ton at Charleroi. Ordinary iron has been in more demand upon the Belgian markets, and producers can scarcely satisfy the requirements of their pressing clients. Were not the season so far advanced a further rise in prices would probably take place; but as the case now stands those concerned will probably rest satisfied with the results already attained. At a recent adjudication of contracts for rails in Belgium there was only one tender—that of the John Cockerell Company, who demanded 7l. 1s. 8d. per ton. The state of the German iron trade is satisfactory; almost all branches of metallurgical industry appear to have made a step in advance. Orders continue to arrive at the German steelworks.

Large purchases of iron have been made by merchants in France, who despair now of being able to do business before the winter upon cheaper terms. Merchants' iron has made about 8l. per ton at Paris; ordinary plates have brought 10l. 12s. per ton upon the same centre. The French steelworks are overwhelmed with orders, and can scarcely meet the requirements of their customers. The Northern of France Railway Company has just given Krupp, of Essen, a very large order for steel springs. In June and July the Paris, Lyons, and Mediterranean Railway Company ordered great quantities of fish plates—80,000 tons of steel, at 9l. 3s. 3d. per ton, from the Châtillon and Commeny Company, and 100,000 tons of iron from the Terre-Noire Works, at 7l. 3s. 8d. per ton. The same company also ordered 500,000 bolts from M. Bauchacourt, at 11l. 9s. 7d. per ton. The imports of iron minerals into France in the first half of the year amounted to 611,860 tons, as compared with 527,897 tons in the corresponding period of 1880. The exports of iron minerals from France in the first half of the year attained an aggregate of 39,550 tons, as compared with 56,240 tons in the corresponding period of 1880. In the Austrian iron trade the sale of the markets is generally satisfactory, and work is everywhere plentiful. The Staatsbahi construction workshops have received an order for 25 locomotives on French account.

The Belgian coal trade appears to be improving, prices being firmly maintained, with rather an upward tendency. Stocks are also almost everywhere disappearing. Deliveries of coal exhibit extreme activity in Belgium. On all sides disposable plant is in urgent request, and it is difficult to satisfy industrialists, whose requirements appear to be increasing from day to day; at the same time there are not the bitter complaints as to want of trucks which were heard in previous years. There has been a strike of short duration in the Bornage, the miners in seven collieries having asked for higher wages, in consequence of the disappearance of stocks, and the general activity of affairs. Winter supplies of coal are being now laid in in France by the more far-seeing consumers. The first really cold weather will bring with it a general demand, which will rapidly reduce stocks. The extraction of coal in the Nord exhibited a notable increase last year, having amounted to 3,701,589 tons, as compared with 3,273,513 tons in 1879, 3,240,004 tons in 1878, 3,286,658 tons in 1877, and 3,376,114 tons in 1876. Comparing 1880 with 1879, it will be seen that the increase in the production last year was 428,076 tons, or 13 per cent. The number of working miners employed increased from 19,496 in 1879 to 20,659 in 1880. The Belgian coal trade has shown no change of importance; prices have continued to rule firm.

The Arlberg Tunnel, the construction of which was initiated by Austria mainly in consequence of Prince Bismarck's new Customs policy, in order that Austro-Hungarian produce might have an independent route to Switzerland and the West of Europe, is apparently being pushed forward with much greater rapidity even than was expected. According to a statement published by an Austrian engineering organ, the average rate of progress is 2160 metres per annum, against 1112 metres in the case of the Mont Cenis Tunnel, and 1670 metres in that of the Gothard Tunnel. The progress of the first year has been 1720 metres, against 170 metres for the first year of the Mont Cenis Tunnel, and 121 metres for the first year of the Gothard Tunnel. The cost per metre is 125l., against about 330l. in the case of the Mont Cenis Tunnel, and upwards of 200l. in that of the Gothard Tunnel. These figures may be taken as an indication of the advance in the art of engineering, upon which, it may be remembered, M. de Lesseps laid stress in relation to his estimate of the time likely to be required for cutting the Panama Canal.

#### THE ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY (LIMITED).

MINA GRANDE.—J. H. Clemen, July 9: Winze in Tunnel Level: 1½ ft. were sunk. We have now communicated with main stopes. The ventilation in the rise over this winze (west branch) has greatly improved.

The Winze in 15: 5½ ft. at 221 were sunk, making the bottom about 67½ ft. below 12. The foreman reports that it is much the same as when I saw it on Tuesday, quartz and lode matter, a little felspar, and a stone of ore on the south side.

CROSS-CUT AT SAN JOSE.—West at tunnel level near junction of Mina Grande and Guayas Lodes: 7½ ft. were driven, making 23½ from east side of tunnel; ground favourable for driving; price 8½ to 10. We wish to see the west branch at this parallel.

GUAYAS CROSS-CUT.—6½ ft. were driven, making 66 ft. per month; price 14 to 15. The breast shows ground of more favourable look for driving. We shall probably change the contractor on Saturday, as we are not satisfied with the progress made.

THE CROSS-CUT IN X LEVEL.—After the timberman had finished the men were put to strip down the end to make the rise 12 ft. long. This will be finished in a few days, and rising resumed.

THE CROSS-CUT IN X LEVEL.—40 ft. above tunnel 3½ ft. were driven. Some veinlets and stringers of quartz occurred in the ground traversed.

STOPE.—6½ ft. on west branch—tunnel level. July 23.—15 Winze: 7 ft. were sunk—price 21—making 75 ft. below 12. We had an improvement which did not last; there is much more ledge matter and less felspar in the present bottom than was the case last week.

CROSS-CUT AT SAN JOSE.—8½ ft. were driven, making 32½ ft. from east side tunnel. This cross-cut is still traversing the horse, and the ground does not look unkindly.

GUAYAS CROSS-CUT.—9½ ft. were driven—price 13 to 14—making 76 ft. in all. RISE ON WEST BRANCH.—9½ ft. lineal were stope down on the north end, and everything is now ready for continuing to rise; a contract was to-day set. The ground uncovered by stripping down the north end is poor, and it looks as though our west pay chute shortens above tunnel. This rise will be pushed—it is of interest. We have provided such facilities for working at this point that we think the native miners can get along very well; at any rate, a week or two will show.

CROSS-CUT IN X LEVEL.—8½ ft. were driven, making 28½ ft. from mouth. We are still in horse, and still carrying on stringers. We intend to take our transit into this place next week. We think we ought by this time to see signs of the western branch, and are getting nervous.

AUG. 6.—RISE ON WEST BRANCH AT TUNNEL LEVEL: 5 ft. were risen during the fortnight, and the ground opened showed a remunerative lode. The ventilation is not good; price per foot 15 to 16.

THE WEST CROSS-CUT SAN JOSE at tunnel level was only extended 1½ ft.; it still penetrates ground of favourable character, but is not yet extended far enough to meet the western branch.

THE CROSS-CUT AT X LEVEL.—We have forwarded you a sketch of this working, which we think has been extended far enough, and which we have stopped. This cross-cut indicates that at this level the west branch, in its south part, is poor. We might drive north on the branch to prove it; but as this level is only 40 ft. above tunnel we have preferred to go up to the next level, also one of the old men's levels, which is 24 ft. higher. In this level we shall cross-cut to the west branch, and as soon as we strike it shall drive north on its course, and communicate with the upraise. The contract for this new cross-cut was set to-day.

THE GUAYAS CROSS-CUT was pushed out 7½ ft., the price being 14. The 15 winze was sunk 3½ ft.; the bottom is not looking so well as it had been, and is now in nearly solid felspar. The price has been risen to 22.

STOPE.—4½ ft. lineal in back of 12. AUG. 20.—The 15 Winze: 8½ ft. were sunk at 21 per foot; 88½ ft. is total depth below the 12 ft. level. A very large part of the bottom is still in felspar; but the eastern side shows quartz, with spots of leaching and smelting ores.

THE UPRaise ON WEST BRANCH TUNNEL was risen 3 ft. at 16, making its top 48 ft. above tunnel. We have placed a small Sturtevant fan for blowing air into this place, but being very short of tubing had to put in makeshifts. This explains the delays of the last fortnight. About one-half the rise is "in ore."

GUAYAS CROSS-CUT.—8½ ft. at 12 and 13 were driven, 92 ft. being total distance from eastern rail in tunnel. The breast is more favourable for driving than it has been for a week or two past.

In the 11 ft. level above tunnel 11½ ft. were driven, making this cross-cut 25½ ft. from east side of 11 drift. The ground is very favourable for driving, and is being worked with tonite. As soon as we cut the western branch we shall drive north on it, and communicate with the upraise, and this drive will, of course, explore the lode.

TIRITO.—July 9: At 54 15½ ft. were driven north—prices 86 to 88—putting the breast 75 ft. north of the Tirito shaft. The ground is still favourable for driving, and the breast leaves out a good deal of water.

54 CROSS-CUT EAST.—We broke through the footwall (which is very well marked) for a distance of 3½ ft. We intend to do this at intervals as the drift progresses north.

July 23.—54 drift north, 19½ ft. were driven—price 86—placing the breast 95 ft. from shaft. The end still makes a good deal of water. We do not expect to meet any ore in the drift until we enter more encouraging ground.

AUG. 6.—The 54 was driven north 6½ ft., having been stopped during the past week for want of labourers. Nothing favourable has yet been met with.

PRIMERA VETA (First Lode).—8½ ft. were risen at 10 per foot. The face has greatly fallen off in value. This rise has been stopped to allow the stopes to attain their height, when it can be continued more cheaply. The "First Lode" is very near the underground engine, and is, in consequence, so hot that we can seldom rise in it much above the stopes level.

STOPE.—17½ ft. lineal in Primera Veta; pay chute 3 ft. wide, ore of fair grade.

AUG. 6.—Stopes: 2½ ft. lineal in first lode.

AUG. 20.—DRIFT IN PRIMERA VETA was driven 3½ ft. at 89. The quantity of ore visible in breast has somewhat fallen off, but the place has a good healthy appearance. The lode is 4 ft. wide, and composed of ore and quartz.

AUG. 23.—On the first lode we are driving on its course about north-west, and hope the present chute will lengthen out; good general samples of milling ore from this place are being broken to-day for assay.

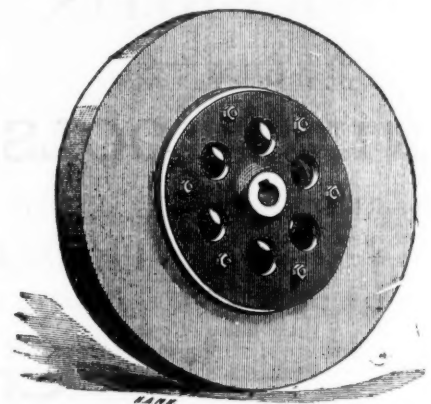
AUG. 24.—We to-day surveyed these workings, and will shortly remit sketch. For several feet this lode has been twisting around easterly, and now runs N. 13 E., being parallel to the mother lode—this is a good sign. This drift is being pushed with full force. The bottom of the present breast shows a fine block of good green ore. The length of back for stoping may now be called 40 ft.

AUG. 27.—Grade of ore, Primera Veta: Description of sample, from a pile of first lode "milling ore," of about 25 cents, two general samples were taken with the shovel. [Note.—By "milling" is meant ore roughly spalled for quartz mill, absolute deads rejected, but no fancy hammer dressing done. Ore roughly broken down in that manner always carries a good deal of gangue.] Sample No. 1: 4-320 per mill, equal 126 ozs. per ton of 2030 lbs. Sample No. 2: 4-405 per mill, equal to 128½ ozs. per ton of 2000 lbs. The ores were green, and showed scarcely any pitting.

TRIBUTERS.—July 23: 14 tons of good green ore were weighed in, costing \$150 50. 37 tons of select smalls from Mina Grande dumps were also received, costing \$61 25.

AUG. 6.—The tributers delivered 11 tons green ores, costing \$90. AUG. 20.—7 tons of green ore were received from the tributers, costing \$83 80. 3 tons of smalls from Mina Grande dump piles were received, costing \$5.

#### FREE GRIT ANNULAR GRINDSTONES.



The desirability of keeping all cutting tools in a state of maximum efficiency is so generally recognised by practical men that all that is required to be known is what grindstone gives the best results and is most economic in use; in these respects Messrs. Ransomes' free grit grindstones, to which the first silver medal was recently awarded at the Mining Institute of Cornwall, are unequalled. These stones are artificially made of a grit combining a great uniformity of texture with extraordinary cutting and grinding power, and they are now manufactured in the form shown in the above engraving, being an annular ring of free grit stone, held by iron side plates bolted together. The advantages claimed for the annular pattern are that they are uniformly moulded to fit side plates, are self-centering, and easily mounted. Less power is required for driving, being lighter than if solid, and there is a saving in cost of from 1l. to 1l. 15s. per stone. This form of stone has been well tested by engineers, who after continued use pronounce it good and effective. The iron side plates do not wear out, therefore, instead of buying a new grindstone when the old one is worn down, the annular stone ring is all that is needed.

It is very truly remarked that a workman's time is more valuable than the cost of a grindstone, and as these stones do a given quantity of work in less than half the time occupied by natural stones, free grits are the cheapest and best. A natural grindstone, 42 in. by 6 in., lasts, say, eight weeks, and costs 1l. 6s. 6d.; grinder's wages, say, eight weeks at 36s., 14l. 8s.; total, 15l. 14s. 6d. A free grit grindstone, 42 in. by 6 in., lasts, say, four weeks, and costs 2l. 13s.; grinder's wages, say, four weeks at 36s., 7l. 4s. = 9l. 17s.; showing a clear saving by use of free grit of 5l. 17s. 6d. Assume a longer life for each, and the saving is more and more in favour of the free grits. The higher the speed at which a grindstone is run, the better will be the results. Probably one main reason why ordinary grindstones are run so slowly is because high velocity would be unsafe; this objection is overcome in these free grits, their tensile strength being uniformly about 600 lbs. per square inch. They are safe run, and used at speed of emery wheels, giving splendid results at from 1700 to 4000 or more surface feet per minute, and doing more than double the work of natural stones. Small sizes may be run up to 5000 surface feet per minute. Run a stone slowly, and press a pointed tool on it with a rest; it will turn down the stone; run the same stone very fast, apply the same tool; the point of it departs, and the stone shows no sign of wear.

The results obtained with the free grit stones, as compared with others, are highly satisfactory. In a comparative test a 36 in. free grit stone, run perfectly dry, ground 4 ozs. of steel from a 14 in. flat file in 10 minutes, whilst a Newcastle stone of the same size removed but 1½ ozs., and a Yorkshire stone but 1-6 oz., the glazing being very slight with the free grit; medium with the Newcastle, and much with the Yorkshire. With water dripping on the work the cutting power was 2-3 ozs., 1-0 oz., and 0-6 oz. respectively. It is pointed out that water dripping on the work is preferable to running the stone in water. These stones, being made in moulds, are uniformly true, as well as smooth at the sides, which are thus available for grinding; no pebbles or hard spots to cause jumping or injury to tools; no coal flaws or clay; the cost of mounting is consequently less than with natural stones. Flanges and round spindles instead of square eyes and wedges are simpler, stronger, more easily mounted, and less liable to injure the stones. An ordinary free grit will grind lathe tools of all kinds, shape forgings, square ends for centering, take down wrought or cast-iron, clean castings and remove their skin previous to turning surface flat faces by using the sides of the stone, sharpen mill bills, &c. Free grit grindstones, or annular rings of stone can be made of any section or size, whether coarse, medium, and fine. Small sizes may be specially prepared for use in lathes, are readily trued with a diamond tool, for grinding with or without water, and without making any dust when in use.

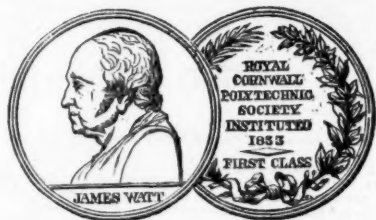
HOLLOWAY'S OINTMENT AND PILLS—RHEUMATISM, NEURALGIA.—It is sometimes difficult to determine which of these diseases is afflicting the sufferer, but this ignorance will not matter if Holloway's remedies be used. They alleviate and cure all muscular, nervous, and spasmodic pains. In hereditary rheumatism, after bathing the affected parts with warm salt water, Holloway's ointment should be well rubbed upon the spot, that it may penetrate and exert its soothing and regulating properties on the deeper vessels and nerves which are unduly excited, and cause both the pain and swelling. Holloway's remedies possess the merit of removing the disease without debilitating the constitution, which was the inevitable result of the bleeding, mercury, and colicium practice formerly adopted in these complaints.



# SANDYCROFT FOUNDRY AND ENGINE-WORKS CO. (LIMITED), CHESTER.

SPECIALITY MINING MACHINERY.

ESTABLISHED 1838.



PUMPING &amp; WINDING ENGINES.

AIR COMPRESSORS AND ROCK DRILLS.

## PITWORK.

Crushing Mills &amp; Stone Breakers.

DRESSING MACHINERY.

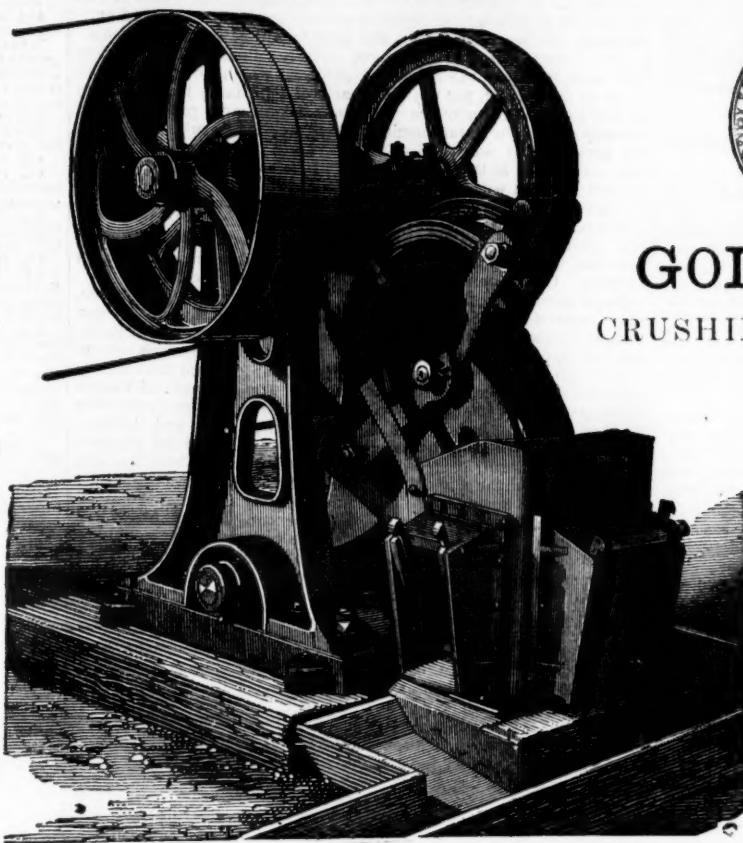
BOILERS.

WATER-WHEELS.

FORGINGS.

MINING TOOLS.

AND STORES OF ALL KINDS.



## GOLD & SILVER

CRUSHING AND AMALGAMATING MACHINERY.

Californian or Gravitation STAMPS

OF ANY SIZE OR PATTERN

PANS.

Concentrators &amp; Separators.

BUDDLES.

RETORTS.

SIEVING &amp; BLANKETS.

Amalgamated Copper Plates.

## PATTERSON'S PATENT ELEPHANT ORE STAMPS.

IN USE IN CORNWALL, CALIFORNIA, BRAZIL, AUSTRALIA, AFRICA, AND INDIA. THE BEST MACHINE FOR PULVERISING

## GOLD QUARTZ,

And other hard and refractory Materials. Particularly designed and adapted for transmission Abroad, and for Countries where Transport is a difficulty. Quickly and economically erected. Can be seen stamping Quartz near London.

LONDON OFFICE: 6, QUEEN STREET PLACE, E.C.

## JOHN MARSDEN,

MANUFACTURER OF

## Air Tubing and Improved Brattice Cloth,

Tarred, Oiled, and Non-Inflammable.

THE OILED CLOTH IS ESPECIALLY RECOMMENDED FOR DAMP MINES, AND IS ALSO A GOOD COVERING FOR SHEDS.

THE NON-INFLAMMABLE FOR THE MORE DANGEROUS MINES.

Samples and prices free, on application at the Works,

VARLEY STREET, OLDHAM ROAD, MANCHESTER.

ALSO MANUFACTURER OF PACKING FOR ENGINES, PUMPS, &amp;c., and STEAM HAMMER RINGS.



## FRANCIS MORTON AND CO., LIMITED, LIVERPOOL,

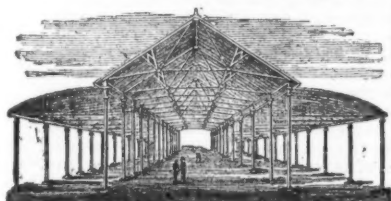
MANUFACTURERS OF

GALVANISED CORRUGATED IRON ROOFS, BUILDINGS, AND SHEDDING,

WHICH THEY HAVE EXTENSIVELY ERECTED FOR THE REQUIREMENTS OF

Forges, Rolling Mills, Puddling Sheds, Ironworks, and Collieries

Erected Complete in this Country, or prepared to Plan for Erection Abroad.

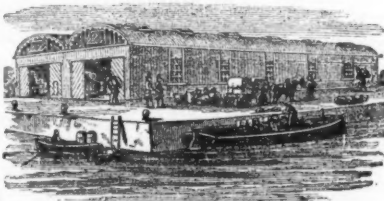


OPEN SHED FOR COVERING LARGE AREAS.

London Office: 1, Delahay Street (first door out of Great George Street), Westminster, S.W.

GALVANISED OR PAINTED CORRUGATED IRON ROOFING PLATES and TILES. HEAVY CORRUGATED IRON PLATES for fireproof floors, roadways, parapets, &amp;c. (for producing which F.M. and Co. have recently laid down powerful Hydraulic Machinery). Wrought-iron Tanks, Guttering, and General Constructional Wrought Ironwork.

DESIGNS PREPARED, AND ILLUSTRATED DESCRIPTIVE CATALOGUES FORWARDED ON APPLICATION.



GENERAL STORE FOR WHARF, ETC.

## British and Foreign Safety Fuse Company,

REDRUTH, CORNWALL,

MANUFACTURERS OF

SAFETY FUSE, FOR MINING AND QUARRYING PURPOSES.

PRICES ON APPLICATION.



## NORMANDY ROCK DRILL.

## NORMANDY AIR COMPRESSOR.

THESE PATENT MACHINES ARE VALVELESS.

RESULTS OF TRIALS at CARDIFF EXHIBITION, on a block of Cornish Granite, on 24th September, 1881:—

	Inches.	min.	sec.
Normandy Rock Drill and Air Compressor, bored	10½	in	2 10
Eclipse Rock Drill and Reliance Air Compressor.	10½	in	2 25
Caumont Rock Drill and Sturgeon's Trunk Air Compressor.....	7½	in	2 30

Normandy's have WON TWO GOLD MEDALS at the Melbourne Exhibition, 1880, and being the simplest, are much the cheapest in first cost and in repairs.

A. NORMANDY, STILWELL, &amp; CO.,

OPPOSITE CUSTOM HOUSE STATION,

VICTORIA DOCKS, LONDON, E.

ESTABLISHED 1820.

## JOSH. COOKE AND CO., SAFETY LAMP

AND GAUZE MANUFACTORY,

Honourable Mention, Paris Exhibition, 1878.

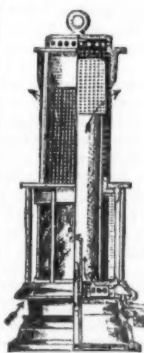
Illustrated Price Lists free, by post or otherwise.

MIDLAND DAVY LAMP WORKS,

Belmont Passage, 203, Lawley-street,

BIRMINGHAM.

Makers of Williamson's Double Safety Lamp, Williamson's Patent Double Safety Lamp shown half in section.

Medal—For Improved Invention—London, Kensington, 1874.  
Ditto—Excellence of Workmanship—Wrexham, 1876.

## ROCK DRILLS AND AIR COMPRESSORS

WARSOP AND HILL, ENGINEERS, NOTTINGHAM, ARE PREPARED TO CONTRACT FOR

DRIVING LEVELS or SINKING SHAFTS, &amp;c., by machinery with all the recent improvements to ensure rapid advance; or to SUPPLY and FIX PLANTS, complete.

STEAM CAPSTANS AND UNDERGROUND HAULAGE A SPECIALITY.



Copyright. All rights reserved.

Hadfield's Sheet of Drawings, No. 28.

# HADFIELD'S STEEL FOUNDRY COMPANY.

ATTERCLIFFE, SHEFFIELD.

GOLD MEDAL.



OUR SOLE SPECIALITY IS  
**STEEL CASTINGS.**  
 FROM 4 LBS. TO 16,000 LBS. EACH.

GOLD MEDAL.



Contractors to H. M. Home, India, and Colonial Governments;  
 Home, Foreign, and Colonial Railways; Admiralty,  
 War Department, &c.

Special Award, Paris, 1878.

Special Award, Melbourne, 1880.

FIRST PRIZES AT LEEDS AND MANCHESTER, 1875. FIRST PRIZES AT LEEDS AND CORNWALL, 1876.

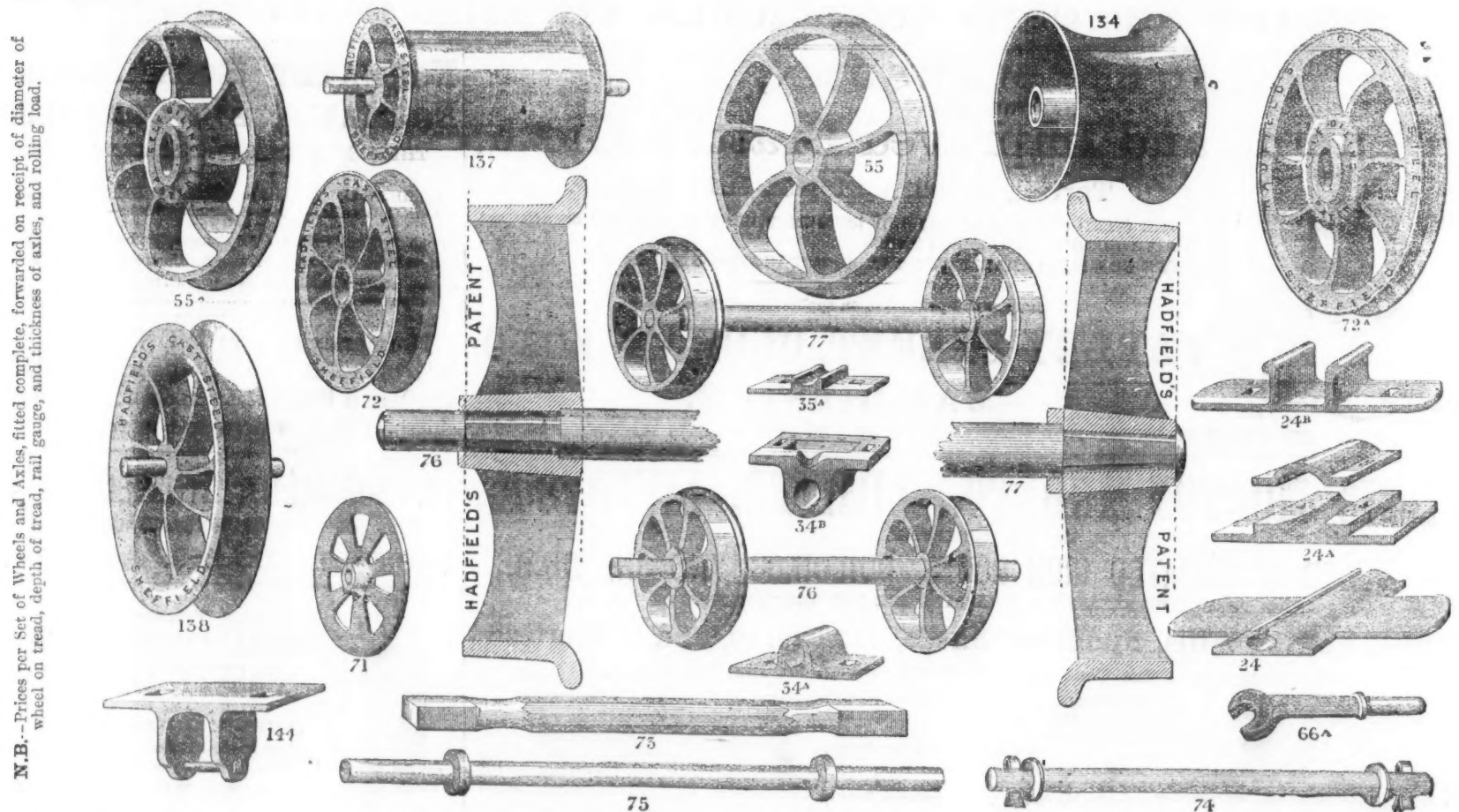
X SPECIAL AND HIGHEST AWARD AT SYDNEY, 1879, DIPLOMA &amp; MEDAL. X

## ▷ HADFIELD'S CAST STEEL WHEELS. ◁

One of our departments is specially adapted for the production of our Patent Steel Wheels and Axles for Collieries, Tramways, Ironstone Mines, Slate Quarries, Ironworks, Lead Mines, &c., and we are now manufacturing 2000 per week. Owing to our patent system of fitting-up Wheels and Axles, which is simple but effective, we are enabled to execute orders with promptitude. We undertake to supply all work entrusted to us in a first-class manner, and only manufacture the BEST quality of material. Over 1100 DIFFERENT WHEEL, PULLEY, AND PEDESTAL PATTERNS IN STOCK, of varying widths of tread, flanges, &c., any of which can be ready for use at the shortest notice.

In addition to the now universally admitted superiority of Hadfield's Steel Wheels over those of Cast-iron for lightness, strength, and wearing qualities, we claim the following SPECIALITIES for our material over any other Steel, Malleable Iron, or other Wheels.

Extra TOUGHNESS or TENACITY, DURABILITY, and SOLIDITY; for proof of this kindly see advertisement marked "List No. 28."



N.B.—Prices per Set of Wheels and Axles, fitted complete, forwarded on receipt of diameter of wheel on tread, depth of tread, rail gauge, and thickness of axles, and rolling load.

We also solicit attention to the following articles, which, in addition to our well-known Patent Steel Wheels and Axles, we are now largely supplying in our CAST STEEL, on account of their great strength, combined with durability and lightness.

**Rollers, Pulleys, Frames, and Stands.**—See our Lists of over 160 different patterns. They possess great durability, lightness, and strength, and add considerably to the life of the steel and other ropes.

**Self-oiling Wheels (Patent).**—Many thousands now at work. Save at least 50 per cent. of oil or grease. Easily charged or re-filled. Reduce friction and wear and tear to a minimum.

**Pedestals, Bushes, Cage Guides, Buffer Boxes, Points, Crossings, and other Colliery Castings** of every description.

Over 1100 different patterns of above in stock, ready for use on the shortest notice. New patterns made to suit special requirements free of charge for quantities.

**Steel Axles** to suit all classes of haulage. We manufacture a special mild quality of steel suitable for this purpose, but have many hundreds of thousands in daily use, giving every satisfaction.

**Steel Gearing** of all kinds. Machine moulded, or from full patterns.

**Miscellaneous Steel Castings**, up to 16,000 lbs. each, to replace expensive wrought-iron and steel forgings and heavy iron castings. Tensile strain of our castings 34 to 40 tons per square inch, as tested by Government.

**NOTE.**—Beware of spurious and cheap imitations which eventually work loose, causing great loss and annoyance, as well as bringing discredit on the name of steel wheels and axles. We are constantly replacing such. See, therefore, that Hadfield's name is on every wheel.

N.B.—Note the Address, and prove truth of the above by giving our Steel Wheels, &c., a trial.

**HADFIELD'S STEEL FOUNDRY COMPANY, HECLA WORKS, ATTERCLIFFE, SHEFFIELD.**

Copyright. All rights reserved.

Hadfield's Sheet of Drawings, No. 28.

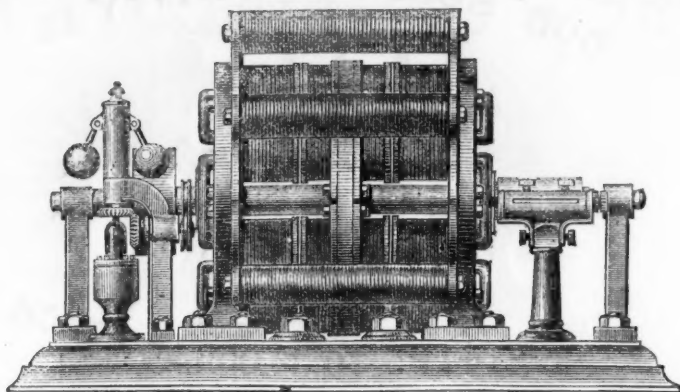


THE DYNAMO-ELECTRIC MACHINE SUPERSEDES EVERY KNOWN BATTERY.

# WILLIAM ELMORE, 91, BLACKFRIARS ROAD, LONDON, S.E.

NO OTHER ADDRESS.

PRICES AND  
PARTICULARS  
GIVEN ON  
APPLICATION.



NO AGENTS.

ALL APPLICATIONS  
SHOULD STATE  
THE PURPOSE  
FOR WHICH THE  
MACHINE IS REQUIRED.

## The "Elmore" Patent Dynamo-Electric Machine,

FOR DEPOSITING

NICKEL, SILVER, BRASS, BRONZE, COPPER, ETC., AND FOR ELECTROTYPING.

REPEATED COMPARATIVE TRIALS have proved that this is the MOST POWERFUL MACHINE IN THE MARKET, that it NEVER REVERSES CURRENT, and that it is very easily worked without special knowledge.

COMPLETE OUTFITS OR MATERIALS FOR NICKEL-PLATING, SILVER-PLATING, ELECTROTYPING, TINNING, BRONZING, &amp;c.

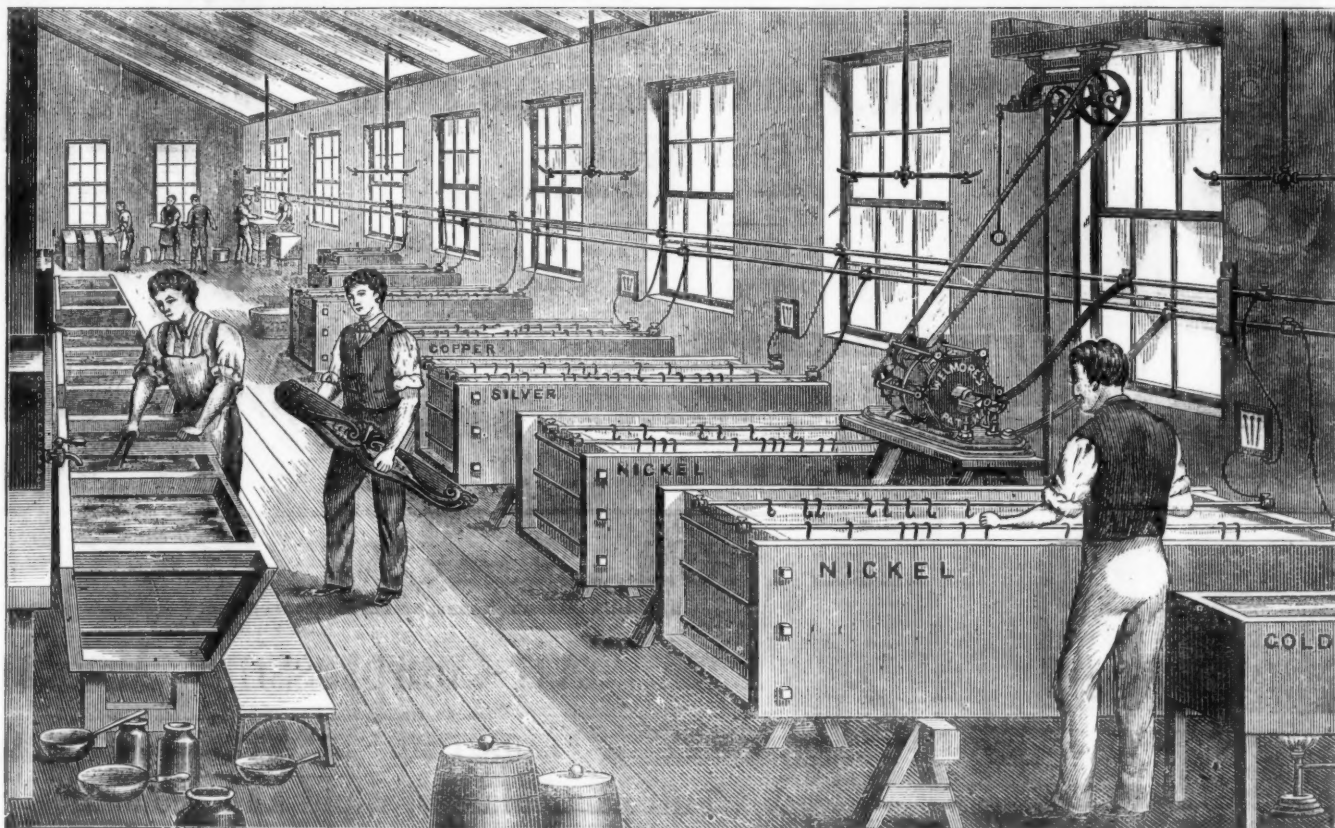
### TO TIN-PLATE MANUFACTURERS AND GALVANIZERS.

The attention of TIN-PLATE MANUFACTURERS AND GALVANIZERS is respectfully directed to the NEW PROCESSES of manufacturing Tin-Plates by depositing the Metal by the current of an "ELMORE'S PATENT" DYNAMO-ELECTRIC MACHINE through aqueous solutions in contradistinction to the old processes of dipping in molten metal.

THE ELECTRO DEPOSITED METAL IS PERFECTLY REGULAR IN character, and the electric current may be so EASILY CONTROLLED as to coat with a MERE FILM OF METAL, OR A DEPOSIT OF ANY DESIRED THICKNESS. The great economy in the cost of plant and cost of production will be immediately self-evident. As nearly the whole of the existing plant can be used in the new process, the cost of altering the system will be comparatively trifling.

DYNAMO-ELECTRIC MACHINES

SPECIALLY CONSTRUCTED FOR DEPOSITING ANY METAL IN ANY QUANTITY.



The above represents an Electro-plating Works, in which an "ELMORE" PATENT DYNAMO-ELECTRIC MACHINE is being used for the deposition of Nickel, Silver, Copper, Bronze, Brass, Gold, Tin, Zinc, &c., from their Solutions.

#### From "INDUSTRY."

"By means of the dynamo-electric machine of Mr. William Elmore, the perfection of nickel-plating is obtained. Dynamo-electricity—that is, electricity produced by motive power—presents advantages which cannot be claimed by any galvanic battery known. Not only is the current produced at a far less cost, but it can be so regulated or controlled that the smallest article can be separately coated by a dynamo-electric machine, capable (in its full application) of depositing from 25 lbs. to 30 lbs. of silver per hour. It is a remarkable fact, moreover, that metals can be deposited from their solutions by dynamo-electricity in less than one-third of the time occupied by the ordinary battery in producing the same result. The quality of the deposit, in regard to its smoothness and regular character, is greatly in favour of dynamo-electricity.

"Having had considerable experience in dynamo-electric machines, Mr. W. Elmore has been careful to note the defects and irregularities which some of the less skilfully constructed machines have presented, and thus he has been enabled to produce a really practical and effective machine, of great power, which may be thoroughly depended upon as being capable of giving the most satisfactory results for all purposes of electro-deposition, including gilding, silvering, bracing, nickeling, and electrotyping.

"The advantages of dynamo-electricity in the important art of electrotyping are beyond estimation. When it is known that a fine, clear, deposit (or 'shell') of copper, 800 ft. square feet, can be obtained by a dynamo-machine in less than three hours, without 'pin-holes,' and other defects common to battery deposits, it will be at once seen that the ordinary battery is effectually and unmistakably superseded.

"One of the most useful purposes to which dynamo-electricity can be applied is the production of chemically pure nickel solutions, and salts of nickel, for the electro-deposition of the metal. The vast amount of elec-

tricity generated in a dynamo-machine enables one to dissolve nickel and other metals in their own solvents, far more economically, and in greater purity than by the ordinary method of treating metals. Electrical power obtained by the ordinary galvanic battery would be far too expensive for this purpose. The solutions formed by the aid of dynamo-electricity are not only purely and economically made; but they can be produced in far less time, and with comparatively little trouble and attention. To Mr. Elmore is due the honour of having introduced into this country the process of making pure nickel solutions and salts by means of dynamo-electricity. The boon he has thus conferred upon a large industrial class we need not dilate upon."

#### From "THE IRONMONGER."

"A still further improvement in the deposition of metals has been recently obtained by the introduction of the dynamo-electric machine of Mr. Wm. Elmore, which is in reality electricity produced by motive power. By this means the current is obtained at a much less cost, and I have seen it regulated to such a nicety that the smallest article could be separately coated in a full-sized vat. The deposit is also effected in about one-third of the time taken by a galvanic battery, and for smoothness and regularity of surface is greatly in favour of the dynamo process, which may be known from the fact that all Mr. Elmore's competitors, both in London and elsewhere, are fast adopting his machine in preference to the old process. He has, in addition, supplied it to many large firms throughout the country for electrotyping purposes, and the reports received from them are gratifying to the inventor. Mr. Elmore is also the author of an interesting little work on the subject, which may be read with interest by those who contemplate entering into what is fast becoming an important industry."

WILLIAM ELMORE, 91, BLACKFRIARS ROAD, LONDON, S.E.

DYNAMO-ELECTRIC MACHINES FOR ELECTRIC LIGHTING.

DYNAMO-ELECTRIC MACHINES SPECIALLY CONSTRUCTED FOR DECOMPOSITION.

DYNAMO-ELECTRIC MACHINES FOR DEPOSITING ANY METAL IN ANY QUANTITY.



## THE GRAND PRIZE, THE TRIPLE AWARD.

Gold Medal, Silver Medal, and Honourable Mention awarded at the Paris Exhibition, in competition with all the World,  
FOR MY LATEST PATENTED STONE BREAKERS AND ORE CRUSHERS.

HIGHEST AWARDS  
FROM THE  
MINING INSTITUTE  
OF CORNWALL.

# H. R. MARSDEN,

ORIGINAL, PATENTEE AND SOLE MAKER OF BLAKE-MARSDEN

PULVERISERS,  
BONE MILLS  
MORTAR MILLS  
&c. &c.

## Improved Patent Stone Breakers & Ore Crushers.

New Patent Reversible Jaws,  
in Sections with Patent  
Faced Backs.

NEW PATENT ADJUSTABLE  
TOGGLES.  
OVER 2750 IN USE.

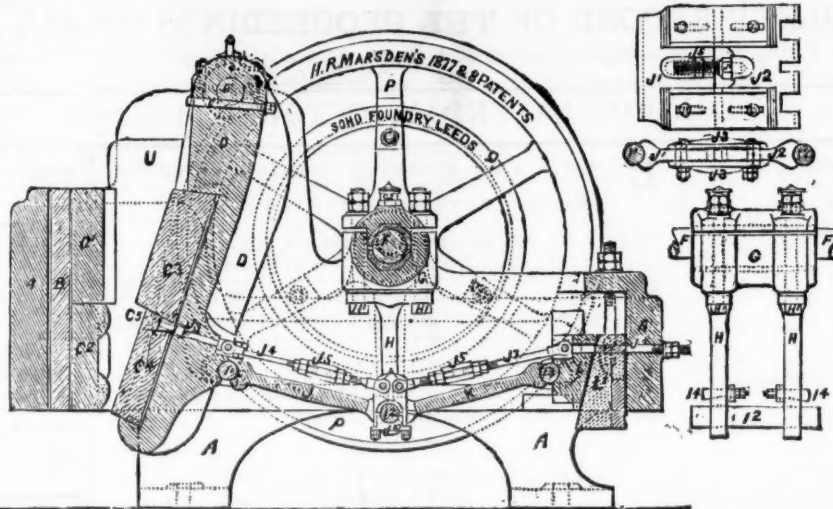
NEW PATENT WROUGHT-IRON CONNECTING  
ROD.

New Patent Draw-back  
Motion.

NEW PATENT STEEL TOGGLE BEARINGS.

60

PRIZE MEDALS.



8, Queen-street-place, London, E.C.  
DEAR SIR,—We have adopted your Stone Breakers at  
many of the mines under our management, and are  
pleased to be able to state that they have in all cases  
given the greatest satisfaction.

We are, yours faithfully,  
JOHN TAYLOR AND SONS.

H. R. Marsden, Esq.,  
Soho Foundry, Meadow-lane, Leeds.

St. John del Rey Mining Company (Limited).  
A SAVING OF FIFTY-FIVE HANDS BY THE USE OF  
ONE MEDIUM-SIZED MACHINE.

BLAKE'S STONE BREAKER.—Statement made by the Managing Director of the St. John del Rey Mining Company, Mr. John Hockin, with regard to six months' practical working of Blake's Stone Breaker, affording facility for judging of the relative economy of machine and hand labour in this kind of work, and also of the cost of getting the Stone Breaker to work in difficult places. The price paid to Mr. Marsden for the machine referred to by Mr. Hockin was £180, and adding to this the cost of engine carriage, and fixing, the aggregate cost to the company of the Breaker in working order was £500. By this outlay the company is enabled to dispense with the labour of 55 people, the value of which is £500 per annum. The cost of working the machine could not be more than the wages of about five men (the machine requires but one man to feed it, so that the rest would be for engineer, fuel, oil, &c.), and allowing for interest on outlay and for renewal when necessary, the saving must be enormous.—Mining Journal.

ALL BEARINGS are renewable, and made of H.R.M.'s Patent Compound ANTIFRICTION METAL.

CATALOGUES, TESTIMONIALS, &c.

H. R. MARSDEN, SOHO FOUNDRY, LEEDS.

Patentee of the New Patent Special Fine Crusher, for reducing Gold Quartz, Lead Ore, and all kinds of Materials to an impalpable powder. Awarded the FIRST SILVER MEDAL by the Cornwall Mining Institute. Particulars of results, &c., on application.

## JOHN CAMERON'S

FLY-WHEELS ON BOTH SIDES.

SPECIALITIES ARE HIS

### STEAM PUMPS

FOR

COLLIERY PURPOSES,

Specially adapted for forcing Water any height;

ALSO, FOR

SINKING, FEEDING BOILERS AND STEAM  
FIRE ENGINES,

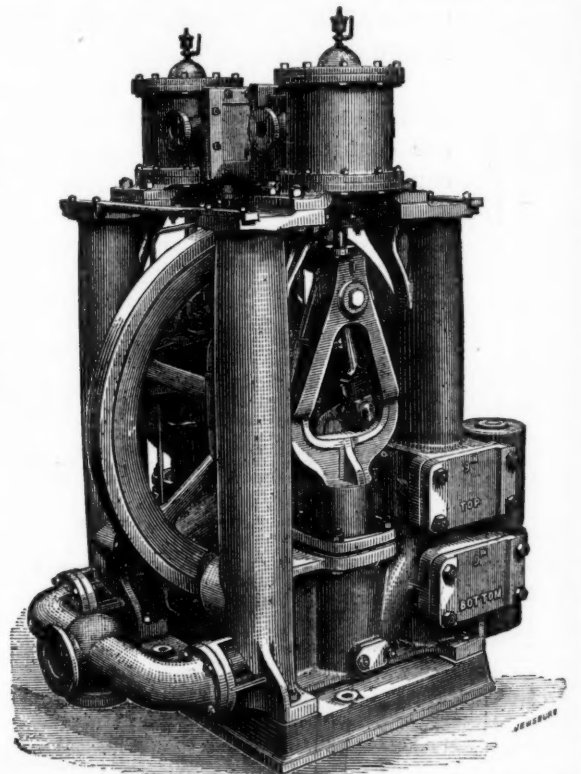
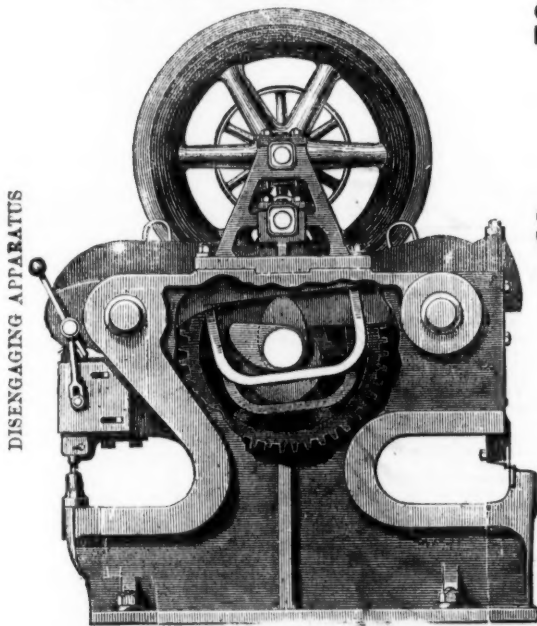
Of which he has made over 8000.

ALSO, HIS

PATENT CAM AND LEVER

PUNCHING AND SHEARING MACHINES.

Works: Oldfield Road, Salford,  
Manchester.



SPECIALITIES:  
DONKEY PUMPS, MINING PUMPS,  
HORIZONTAL PUMPS, TAR PUMPS,  
AIR COMPRESSORS,  
FIRE ENGINES, STEAM ENGINES,  
WILBURN IRON WORKS  
SALFORD, MANCHESTER.

MAPS OF THE MINES, AND OF UTAH TERRITORY

FROISETH'S NEW AND REVISED MAP FOR 1875.—  
Size 40 by 56 inches, scale 8 miles to the inch. Handsomely engraved, coloured in counties, showing the Towns, Settlements, Rivers, Lakes, Railroads, Mining Districts, &c., throughout the Territory, and all the Government Surveys to date. Mounted on cloth, £2; half-mounted, £1 12s.; pocket form, £1.  
Also, GENERAL MINING MAP OF UTAH, showing twenty-eight of the principal Mining Districts adjacent to Salt Lake City, and location of the most prominent mines. Price, pocket form, 6s.  
Also, NEW MAP OF LITTLE AND BIG COTTONWOOD MINING DISTRICTS showing the location of over Four Hundred Mines and Tunnel Sites, together with the Mines Surveyed for United States Patent. Price, sheets, 6s.; pocket form, 3s.

For sale, and supplied by—  
TRUBNER and Co., 57 and 59 Ludgate Hill, London.  
B. A. M. FROISETH, Salt Lake City, Utah, U.S.

Now ready, price 3s., by post 3s. 3d., Sixth Edition; Twentieth Thousand Copy, much improved, and enlarged to nearly 300 pages.

HOPKIN'S CONVERSATIONS ON MINES, between Father and Son. The additions to the work are near 80 pages of useful information, principally questions and answers, with a view to assist applicants intending to pass an examination as mine managers, together with tables, rules of measurement, and other information on the moving and propelling power of ventilation, a subject which has caused so much controversy.  
The following few testimonials, out of hundreds in Mr. Hopkin's possession, speak to the value of the work:—  
"The book cannot fail to be well received by all connected with collieries."—Mining Journal.  
"The contents are really valuable to the miners of this country."—Miners' Conference.  
"Such a work, well understood by miners, would do more to prevent colliery accidents than an army of inspectors."—Colliery Guardian.  
London: MINING JOURNAL Office, 26 Fleet-street, E.C., and to be had of all booksellers.

## THE "CHAMPION" ROCK BORER

MINE AND QUARRY STANDS, STEEL DRILLS, SPECIALLY PREPARED INDIA RUBBER HOSE, TESTED IRON PIPES, &c.

### Air-Compressing Machinery,

Simple, strong, and giving most excellent results, and

ELECTRIC BLASTING APPARATUS.

Full particulars of rapid and economical work effected  
by this machinery, on application.

R. H. HARRIS, late

ULLATHORNE & CO., Mechanical and Consulting Engineers,  
63, QUEEN VICTORIA STREET, LONDON, E.C.



## J. WOOD ASTON AND CO., STOURBRIDGE

(WORKS AND OFFICES ADJOINING ORADLEY STATION),

Manufacturers of

### CRANE, INCLINE, AND PIT CHAINS,

Also CHAIN CABLES, ANCHORS, and RIGGING CHAINS, IRON and STEEL SHOVELS, SPADES, FORKS, ANVILS, VICES, SCYTHES, HAY and CHAFF KNIVES, PICKS, HAMMERS, NAILS, RAILWAY and MINING TOOLS, FRYING PANS, BOWLS, LADLES, &c., &c.

Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions

WELDED STEEL CHAINS { FOR CRANES, INCLINES, MINES, &c.,  
MADE ALL SIZES.